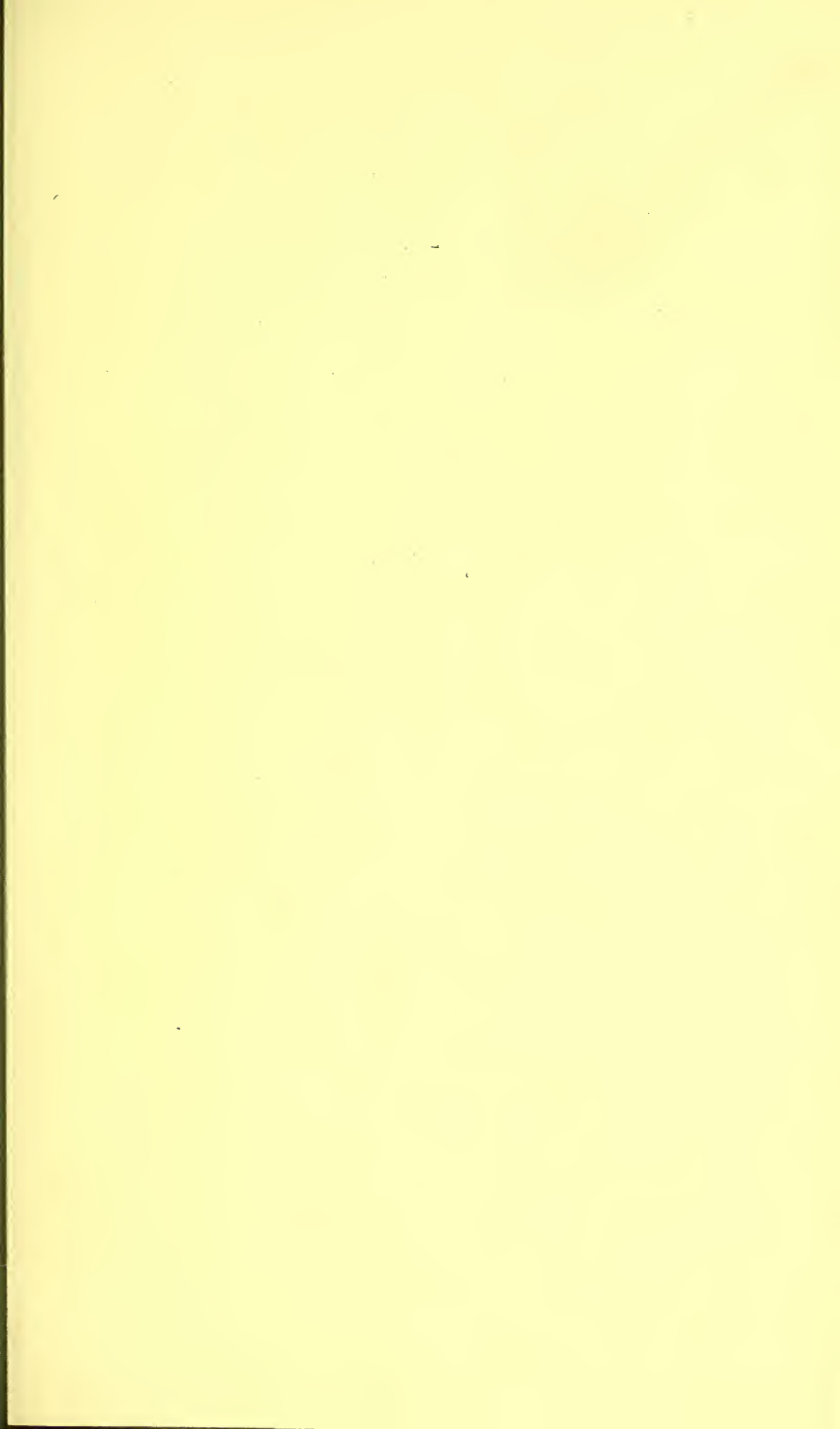




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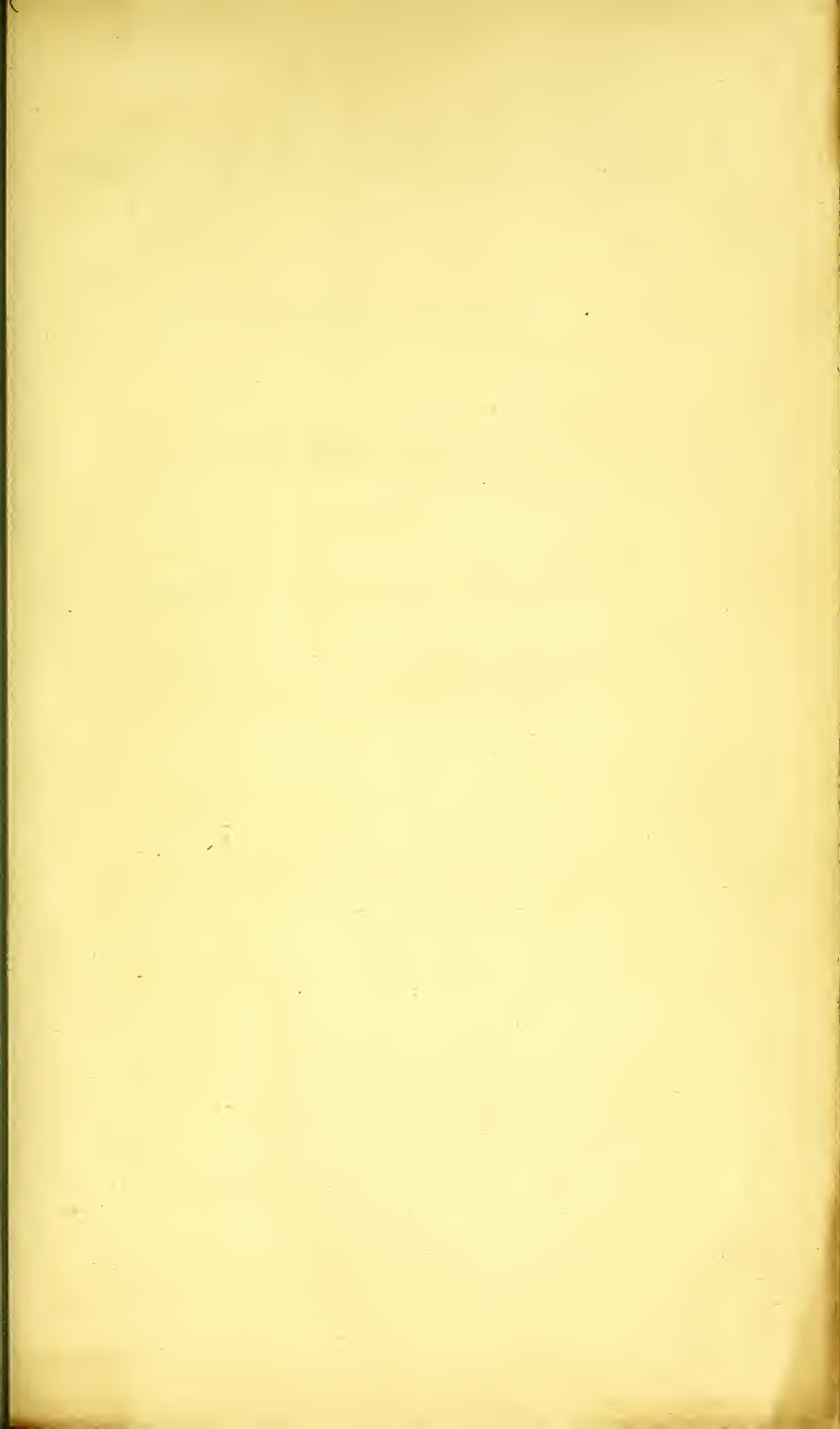
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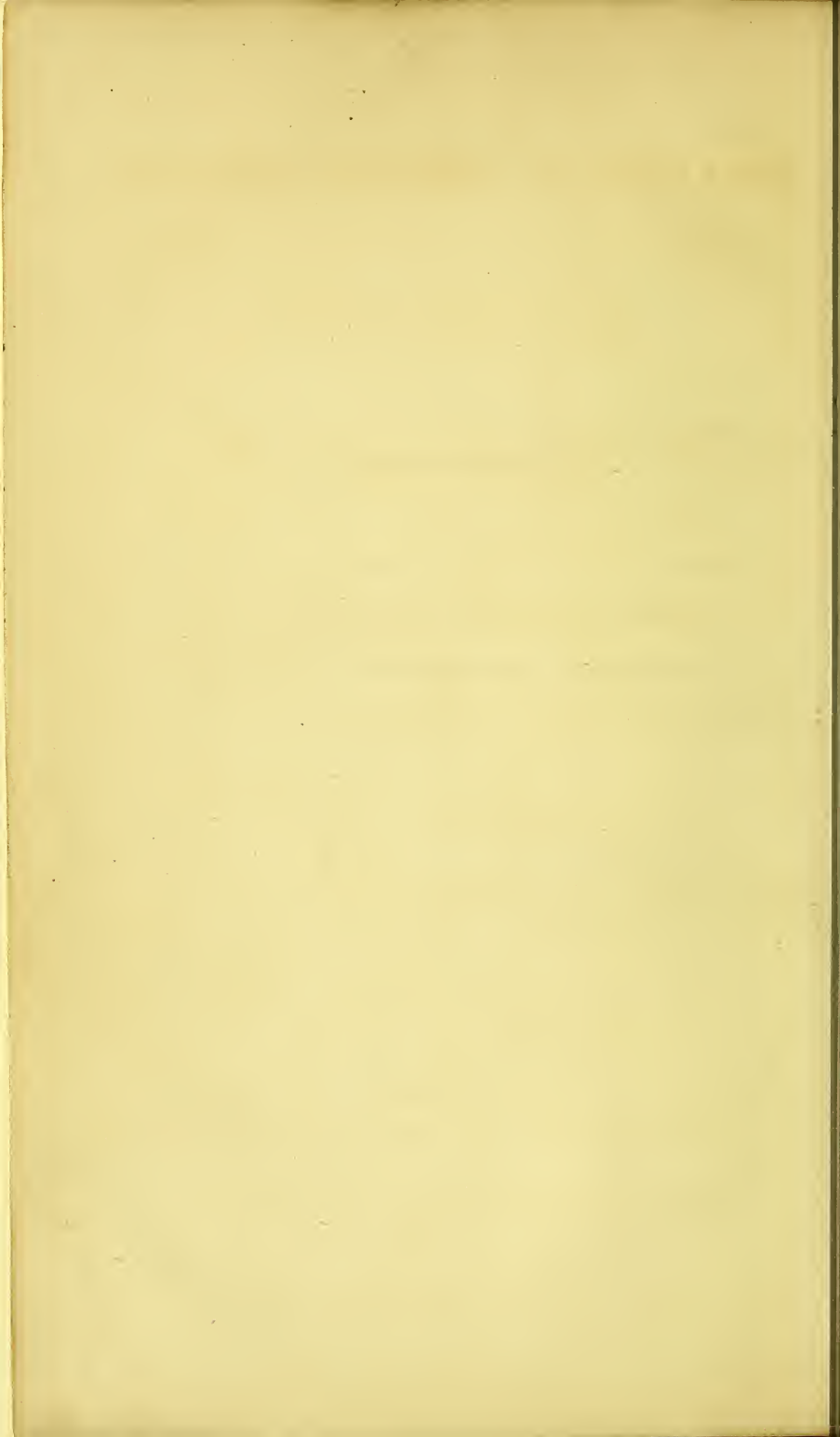












PRACTICAL OBSERVATIONS

ON VARIOUS SUBJECTS RELATING TO

MIDWIFERY,

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PART I.

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IN the following pages, the object of the Author is, to record those deviations from the established modes of practice, in several ordinary affections of women, which the experience of nearly half a century has led him to adopt and to recommend.

He has thus followed the example of his old pupil, Dr Gooch of London, whose valuable practical observations have elucidated several important subjects relating to midwifery; but with this difference, that he publishes his opinions while still actively engaged in the duties of his profession. It has occurred to him that, by this plan, he may have an opportunity of reconsidering, by actual observation in prac-

tice, any particular subject on which he may be alleged to have taken an erroneous view.

From the nature of this publication, it has been necessary to refer to the practical doctrines of his cotemporaries, but in doing so, the Author trusts that he has adhered to the rule which he has invariably adopted in lecturing, that of noticing only the opinions of those who have deservedly acquired public estimation, and of stating his objections to those opinions, with the courtesy and respect due to such professional brethren. His great aim has always been, to improve that department of medical science, which he has been teaching in the University of Edinburgh for above forty years.

EDINBURGH, 23, ST ANDREW'S SQUARE,
January 11, 1836.

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THE HISTORY OF THE

The history of the world is a subject of great interest and importance. It is a subject which has attracted the attention of men of all ages and of all nations. The history of the world is a subject which has been the subject of many different theories and opinions. Some have thought of it as a series of events, while others have thought of it as a series of causes and effects. Some have thought of it as a series of facts, while others have thought of it as a series of principles. The history of the world is a subject which has been the subject of many different theories and opinions. Some have thought of it as a series of events, while others have thought of it as a series of causes and effects. Some have thought of it as a series of facts, while others have thought of it as a series of principles.

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PRACTICAL OBSERVATIONS,

&c. &c. &c.

ON PROLAPSUS OF THE UTERUS.

OF the chronic diseases arising from a local cause, to which women in civilized society are liable, prolapsus uteri, or displacement of the womb, is perhaps the most frequent. As it occurs in all ranks, and, although not a dangerous affection, is always more or less annoying, often occasioning, too, a broken state of health, it must seem wonderful that medical men should have fallen into the most extraordinary errors respecting its nature and treatment, more especially since their attention to the subject must have been particularly directed by daily observation.

The symptoms of this disease are not uniform in every case, as those of local disorders

commonly are, for in some individuals they steal on gradually, while in others they force themselves suddenly on the notice of the patient. Thus, in many cases, an uneasy sense of pressure, or bearing down, with weariness in the loins on standing or walking, are first experienced, and by and by those feelings occurring in an aggravated degree, are found to occasion more than usually frequent calls to pass urine. In other cases, the patient, without any previous warning, suddenly feels, in the act of relieving the bowels, something forced down upon, or partially thrust out of the vulva.

But the progress of the disease is fully as irregular in different individuals as the original incipient symptoms. In robust women of the lower ranks, little inconvenience is experienced till the uterus be actually protruded through the external parts; and even, under such circumstances, if they manage by any mechanical contrivance to prevent the actual protrusion, they can make all the ordinary exertions re-

quired by their mode of life, such as carrying milk, or vegetables, or fish through a large city.

Far different is the progress of the disease in delicate individuals in the higher ranks. The uneasy feelings on standing or walking, lead them to avoid all exertions which are productive of such sufferings. Their general health soon declines from want of air and exercise, and the increasing descent of the uterus produces an unusual discharge from the mucous glands of the vagina. This aggravates the general weakness, as well as the sense of weariness in the back—a broken constitution is the natural consequence.

It is a general opinion among many respectable practitioners, that the sufferings of the patient are proportioned to the degree of the disease. Accordingly, Gardien, vol. i., page 178, considers that there are three degrees or stages of the disease, viz., relaxation, falling down, and protrusion. But experience shews,

that peculiarity of constitution has more influence than the degree of displacement. Thus, it consists with the author's knowledge, that a woman with a protusion, which in size equalled a quart bottle, and in whom both the protuded parts and the internal surface of the thighs were extensively ulcerated, maintained for four years an epileptic husband and four children by the laborious occupation (now exploded in this city) of a water carrier. This woman's general health was unimpaired, and she asserted that her appetite was good, and that she had no morbid affection whatever of the stomach or bowels. Yet the protuded parts must have occasioned such displacement of the abdominal viscera, that, *a priori*, it might have been expected that the digestive functions should have been greatly deranged. In the case of a poor woman named Watkins, who died in the Kensington Workhouse, in whom the protruded parts measured more than fifteen inches in circumference, and six and a half in length, it was found that they contained, besides the uterus, the urinary bladder, with a portion of

the meatus urinarius, part of the rectum, the falopian tubes, and the small intestines.*

The author has seen three other cases where the size of the protruded parts was enormous, though certainly not equal to that of Watkins; and two of the individuals were gaining their livelihood as laundresses, and the third as a milk woman, walking through this city at least two hours twice a-day.

These cases suggest a doubt in respect to the cause of the dyspeptic complaints which attend even slight degrees of prolapsus in the better ranks. Such complaints have been supposed, by the latest authors, to be the effect of sympathy between the stomach and uterus, or of displacement of the abdominal viscera. Ought not the above facts to suggest to an unprejudiced mind, the idea that the treatment

* Observations on the Diseases of Females, &c., by Sir Chas. M. Clarke, part i., pages 64, 65 and 119.

pursued in the better ranks, has a very considerable influence in occasioning the secondary symptoms?—This was certainly the inference which the author deduced from the cases above mentioned.

While the subjects of this disease may be said to be most usually women who have been mothers, there can be no doubt that virgins, as well as women, who, though married have never conceived, are occasionally afflicted with it. In the lower ranks in this country, few women who have had a family attain the fiftieth year without being affected with some degree of the disease.

There are at least three diseases with which prolapsus uteri may be confounded, and from which, of course, it is necessary to distinguish it, viz., chronic enlargement of the uterus, polypous excrescence, and incipient scirrhusity. Nothing but actual examination can enable the practitioner to draw the line of distinction. In this disease the os uteri forms

the apex of the protruding part, in whatever position the patient may be placed, and no tenderness whatever is experienced from pressing upon the part.

Some authors have divided cases of prolapsus, into those of *antiversion*, *retroversion*, &c., but this is a most unnecessary distinction, because the exact position which the uterus assumes, when displaced, must be influenced by the relative condition of the adjoining parts, and because the practice cannot be at all regulated by that circumstance.

The prognosis in this chronic disease may be always favourable, in so far as life is concerned. For example, no medical man of competent knowledge would consider that the life of a patient with prolapsus uteri was not insurable. But, as to the probability of the disease being cured, that must depend on several considerations, viz., the age of the patient, her general health, the apparent cause of her disease, and its duration.

In elderly relaxed women, relief may be afforded, but nothing more should be expected or promised. In young healthy subjects, a complete cure may be accomplished, unless there have been the mechanical destruction (from mismanagement during child-bearing) of some of the parts which naturally support the womb.

Formerly the universally received opinion respecting the mechanical cause of prolapsus uteri, was, that it was relaxation of the ligaments which support that part; and although it is well known that laceration of the perinæum or of the posterior extremity of the vagina was always followed by falling down of the womb, the fact was disregarded.

It might have been expected that our improved knowledge of anatomy might have corrected this erroneous opinion, but it evidently has not, for in the works of very eminent and recent authors, it will be found that the old

doctrine is implicitly adopted, either professedly or tacitly.*

Mons. Gardien has seen the fallacy of this doctrine, for he denies (vol. i., p. 177), that the broad and round ligaments support the uterus in situ, and he asserts, that "the true predisponent cause," as he calls it, "is the softening and relaxation of the membranes of the vagina, and of the cellular tissue which unites them to the linings of the pelvis." Notwithstanding his improved knowledge of the cause of the disease, Mons. Gardien has suggested no change in the practice. It requires only a very little attention to the structure of the contents of the pelvis in the female, to ascertain that Mons. Gardien's remark, that the ligaments of the uterus do not retain it in its proper position is correct.

* *Vide* Observations on the Diseases of Females, by Sir Chas. M. Clarke, part i., page 68, line 19.—Professor Burns's Principles of Midwifery, eighth edition, page 130, line 10.—Professor Davis's Principles and Practice of Obstetric Medicine, page 548, line 16.

The expansion of the peritoneal coat across the brim of the pelvis, has been, by many respectable authors (such as Scarpa, &c.), supposed to serve as a second diaphragm, in preventing the contents of the abdomen from displacing those of the pelvis, as the true diaphragm prevents the contents of the chest from deranging those of the abdomen. But the idea is more ingenious than accurate. The diaphragm is a strong muscle, the peritonæal expansion alluded to is a weak yielding membrane. The action of the diaphragm would frequently displace the stomach or intestines, were it not counteracted by the resistance of the abdominal muscles. Accordingly, wherever there is lesion or relaxation of those muscles, a protrusion or hernia follows.

But the expansion of the peritonæum alluded to, could, from the feebleness of its texture, have little influence in preserving the contents of the pelvis in situ, were it not for the strong counter pressure supplied by the muscles which line the pelvis, and fill up its openings and out-

let. Although, therefore, the womb in the unimpregnated state, appears, in the dead subject, to be supported by the peritonæum (as that membrane covers a great part of it, and connects it to the sides of the pelvis), yet it is evident that the bladder, the vagina, the rectum, and more especially the muscles lining the pelvis, and those connecting the lower part of the trunk and the inferior extremities, mainly contribute to hold the uterus in its natural position. Professor Burns, in his eighth edition, page 129, has very well explained this, and yet he has not been led to the proper inference in respect to the nature of prolapsus uteri.*

It will be found that, in every case of prolapsus uteri, the vagina, or bladder, or rectum, or muscles lining the pelvis, or filling up its outlet, are debilitated or lacerated, and therefore the relaxation of the peritonæum and its productions (the ligaments of the uterus) is the effect of the prolapsus, and not the cause.

* *Vide Loco Citato*, from line 28, page 129, onwards.

Cases of prolapsus in virgins, it may be alleged, furnish an objection to this reasoning. Admitting, it may be urged, that frequent child-bearing, accidents during parturition, and debilitating diseases, by widening, or that corporeal injuries, by lacerating the vagina or external parts, or by relaxing the muscles at the outlet of the pelvis, may allow the uterus to be forced down, how can the accidental and sudden prolapsus which now and then occurs in young healthy virgins be accounted for ?

Such cases may be easily explained. The accident in those cases is the effect of a sudden exertion in moving the body, at a time when the natural supports of the uterus are relaxed, viz., during menstruation. While that process goes on, every part connected with the uterus feels flabby and open to the woman herself, and any violent action of the locomotive muscles, as in leaping, or dancing, or running, must occasion displacement of the uterus, in the same way that it would force out a portion of the intestine, if the abdominal muscles were weakened at their ring.

The treatment hitherto pursued in cases of prolapsus uteri has been the following, viz., in incipient cases, the horizontal posture,—the application of cold to the loins, external parts, and vagina,—the injection of styptic liquors into the vagina, with the internal use of tonic medicines,—and in cases of long standing, in addition to the above means, the employment of mechanical expedients for supporting the uterus, called pessaries. At least such are the means for the cure of this disease recommended by the most eminent and recent authors.*

On the utility of the first of those means, viz., horizontal posture, all the latest respectable authors cordially concur. Sir Chas. M. Clarke says (page 103), “ In every case of procidentia much may be done by posture ; the patient

* *Vide* Observations on the Diseases of Females, &c., by Sir Chas. M. Clarke, part i., page 83, *et seq.*—Gardien *Traité, Complette d'Accouchemens*, vol. i., page 180.—Professor Burns's *Principles of Midwifery*, eighth edition, page 130; and Professor Davis's *Principles and Practice of Obstetric Medicine*, page 550.

should lie as much as possible upon a bed or upon a sofa ; and a mattress, as presenting a flatter surface, and being less likely to debilitate, is preferable to a bed of down or feathers. The rooms which the patients inhabit should be kept cool."

Professor Burns's words are (page 131), " All exertions are to be avoided, and the recumbent posture much observed. This last advice, it is evident, must, in the early stage, be the most effectual mean, as it allows time and opportunity for the parts to recover their tone and tightness."

Mons. Gardien says (vol. i., p. 180), that " The patient ought to be directed to confine herself to the horizontal posture for a long time."

Dr Davis inculcates the same doctrine (page 550), "It will be found," he says, "almost always necessary to superadd to any measures of constitutional treatment suggested by the general

indication above adverted to, the obligation of an immediate return to the practice of the duty previously neglected, that of using the horizontal position either altogether, or for many hours daily, according to the more or less urgent claims of the case. At the very commencement of a bearing down of this kind, the personal management in question immediately put in practice, and rigidly pursued for two or three months, might probably suffice to insure a restoration of the suspensary ligaments of the uterus to their former tone and strength."

Although the horizontal posture immediately relieves the uneasy feelings of the patient, the author long ago ascertained that it tends not only to impair the general health, but also to aggravate the disease, by increasing the relaxation of the natural supports of the womb; and daily experience has established the validity of this opinion.

The second means proposed, viz., the application of cold, either in the form of the cold

bath, or by lotions of water artificially cooled, have been highly extolled by Sir Chas. M. Clarke, (p. 83, &c.) In slight cases the cold plunge bath furnishes an excellent auxiliary means; but the author cannot sanction the introduction of a piece of ice into the vagina, as suggested (page 90) by Sir Chas. It could answer no good purpose, that is, it could not cure the disease, while the probability is, that it would produce inflammation of the surface of the vagina.

Thirdly, as to the injecting of styptic liquors into the vagina, it is a practice to which also the author, from much experience, must object in the most explicit terms. Sir Chas. Clarke has been at very particular pains to describe the instrument to be employed for this purpose (page 90), the manner in which the injections are to be thrown up, and the medicinal substances of which they should be composed (page 95.) In recommendation of astringent injections, Professor Burns cordially agrees with Sir Chas. M. Clarke (page 130.) Mons.

Gardien has adopted the same practice (page 180), and also Professor Davis (page 549).

Against this mode of practice the author has to offer the following, as he considers, most serious objections :—

Firstly, On the supposition that styptic injections were safe, and that they could really restore tone to the vagina (which the author concedes for the sake of argument, for the contrary is his sincere belief), it must be obvious, that if his view of the nature of the disease be correct, no benefit could accrue from the practice. Accordingly, no practitioner trusts to those means in cases of any considerable degree of prolapsus uteri.

Secondly, It is admitted that, as the irritability of the mucous membrane of the vagina varies in different women, as well as in the same woman at different periods of time (Sir Chas. M. Clarke's Observations, page 96), the injection of strong astringents may prove injurious.

Doubts are, therefore, entertained on the safety of the practice, even by those who recommend it.

Thirdly, The author's experience has convinced him, that astringent injections into vagina are apt to injure the uterus, rather than the canal into which they are thrown. He can solemnly aver, that of the numerous cases of chronic enlargement of the uterus which have fallen under his notice, by far the greater number had been unequivocally occasioned by the use of styptic injections per vaginam.

Fourthly, The immediate effect of such injections in cases of prolapsus uteri of any standing, viz., the diminution or suppression of leucorrhœal discharge, has been in many cases followed by distressing headaches, or obstinate inflammation of the eyes, or eruptions on the face.

For these reasons, the author for many years has objected to the use of such means, both in

cases of prolapsus uteri and of leucorrhœa. He has restricted their employment to cases of ichorous discharges in consequence of cancer, or of malignant tumours of the uterus, or of decomposition of portions of the retained ovum in cases of abortion, &c. ; and in general, he recommends vegetable preparations or diluted chloride of lime as the only safe injections.

It was formerly a practice in this city to employ styptic injections in cases of menorrhagia in debilitated subjects ; but many years ago, the author was called to a case which strongly evinced the impropriety of the practice. The patient was an elderly lady, who had had for several months a draining of blood per vaginam on the slightest exertion, and in whom no other organic affection had been discovered than great relaxation of the uterus. For this a solution of the sulphate of alumine had for some time been thrown up the vagina evening and morning.

When the author saw this patient, she la-

boured under great local irritation and smart symptomatic fever. On examining per vaginam, he found the whole of that canal thickly coated with what seemed to him an earthy substance, and on scooping off a little of it, he ascertained it to be a combination of alum with the red particles of the blood. When all this coating was cleared off, the local irritation and symptomatic fever quickly subsided.

Against the above objections to the use of local styptics, the author is aware that innumerable cases may be cited of patients who had used astringent injections for months with perfect impunity. His explanation of such cases is, that the fluids had never been properly injected, for it is his persuasion that not one patient in ten can do this effectually.

The fourth means recommended, viz., the use of internal tonics, is admitted on all hands to be merely auxiliary, and therefore there can be no difference of opinion on that subject.

Where the disease does not readily yield to palliative treatment, the mechanical support of the uterus, by means of expedients called pessaries, has been recommended. Such contrivances appear to have been employed from the earliest periods of civilization, and are still sanctioned by the profession in every part of the world. Sir Chas. M. Clarke and Professor Davis have printed minute directions respecting the form and adaptation of such expedients. Mons. Gardien and Professor Burns are equally partial to their employment.

But, from the earliest period of the author's professional life, he was accustomed in lecturing to urge the following objections against the use of pessaries :—

Firstly, They can only act as palliatives, whatever may be the degree of the disease.

Secondly, They necessarily keep up a continued irritation in the passage, and of course a mucous discharge from the vagina.

Thirdly, Unless properly adapted, they make injurious pressure on the contents of the pelvis.

Fourthly, If not frequently taken out and cleaned, they become encrusted with a calcareous matter, which proves highly irritating.

Fifthly, They subject the patient to the charge of the medical attendant for life. And,

Lastly, Cases from time to time occur, where, from the laceration of the perinæum, &c., no ordinary pessary can be retained.*

* Sir Chas. M. Clarke, in the work alluded to (page 120, part i., of his *Observations on the Diseases of Females*), has admitted this, and has proposed the following mode of supporting pessaries in cases of ruptured perinæum:—

“ In almost all the cases in which the degree of the disease is so considerable, every pessary which can be introduced will be forced away by the slightest efforts of the woman—even the globular pessary (which is the best) will not be retained, neither can it be kept in the vagina by any common bandage. But, by the following contrivance, the globular pessary may be kept in the vagina. In the first

Between twenty and thirty years ago, the author ventured upon an experiment for the relief of cases where no pessary could be retained. His object was to excite inflammation on the internal surface of the vagina, in the hopes that adhesions would succeed, as he had heard of one case where an unexpected cure had in this way happened. In that case the prolapsed parts, with several portions in a state of ulceration, had been reduced, and the cohesion of the sides of the vagina had taken

place, a pessary is to be chosen of the size which the case requires, and a small slip of brass is to be attached to it by its two ends, leaving a space between the instrument and the centre of this piece of brass; a belt of leather long enough to go round the patient's body is also to be prepared; to the centre of which, behind, a brass wire as thick as a common quill is to be attached by a screw. This wire is now to be properly bent; and the pessary being introduced into the vagina, the wire is to be passed between the pessary and the piece of brass attached to it, and being brought up between the thighs, it is to be attached to the fore part of the circular strap. The reduced parts are by this means supported by a pessary, and this is kept in its place by the unyielding piece of metal."

place, by which the return of the prolapsus was prevented.

For the purpose of imitating the above process of nature, he introduced a ball of the emplastrum ceral into the vagina, and thus excited extensive inflammation, followed by sloughing of the whole surface, but without any favourable result.

The patient having entreated that another endeavour to relieve her should be made, he directed a thin muslin bag, containing two ounces of powdered alum, to be kept in the vagina for four-and-twenty hours. This also was followed by sloughing of the whole mucous membrane, but no adhesive inflammation succeeded.

These experiments having failed, the author was induced, in one very bad case, to sanction a surgical operation, viz., the bringing together the sides of the vagina by means of ligatures. The operation was very ably performed by Mr

Liston, but no union was effected, and the sufferings of the patient from the operation were such, that the author resolved never to be again a party to such a practice.

Notwithstanding these objections to the use of pessaries, the author admits that he continued for many years to employ them, principally from his reluctance to reject means so universally adopted by the profession. At last, however, a case occurred which made him resolve to banish them from his individual practice.

An elderly lady in the seventy-eighth year of her age, after having suffered much for a considerable time in consequence of prolapsus, consulted the author, and he found that the only pessary which could be retained was one in the form of an oval cup, about two inches and a half in length by one and three quarters in breadth, and three quarters of an inch deep, with a bottom dividing it into two equal parts. It was made of tin-plate strongly japanned.

Most minute directions were given to have this pessary withdrawn once a-week and carefully cleaned.

The author heard no more of the case for six or eight months, when he was again called to visit the patient, and to his surprise and vexation, he learned that the pessary had never been withdrawn. On examination, he found it so strongly impacted, that any attempt at moving it with the finger was quite fruitless, while at the same time it excited such pain as plainly indicated some further mischief. Accordingly, it was discovered that a portion of the pessary had made its way into the rectum. It became necessary to contrive two steel-scoops adapted to the shape of the pessary, with handles and locks similar to those of the midwifery forceps, to accomplish the extraction of the pessary without further injury. The patient recovered after the operation and survived some months.*

* The pessary was filled at both ends with calcareous matter, and is preserved in the collection of the author.

From the date of that case, the author has never sanctioned the use of pessaries.

Experience having thus convinced the author that the established practice in cases of prolapsus uteri is most unsuccessful, it was incumbent on him to endeavour to contrive some other means. On the indications of cure in this disease, there could be no difference of opinion. As Sir Chas. M. Clarke has well observed, page 83, "The curative intentions appear to be, to increase the strength of the parts which are weak, and to afford a support to the tumour, the descent of which produces the symptoms."

But the latter indication should evidently be first attended to, for unless the uterus be supported, no means for "strengthening the weak parts" could be of any avail. Observation and reflection led the author to the discovery of a mode of supporting the uterus, which is both effectual and safe, and the experience of several years has now fully established its

superiority to every means hitherto suggested.

He had been accustomed for a considerable time, in cases of lacerated perinæum, to recommend the use of the T bandage, in order to secure the retention of the globe pessary. The comfort which patients experienced from this bandage, gradually led him to try the effect of a cushion interposed between the outlet of the pelvis and the cross strap of the bandage, withdrawing the pessary, and the experiment succeeded completely, for the patients felt perfect relief. In every case, therefore, of prolapsus uteri, whatever may have been its degree, to which he has been called for several years past, he has suggested this very simple contrivance.

In slight cases of short standing, the circular may be made of fine linen or jean, lined with shamoy leather, but in more serious degrees of the disease, it ought to be made of tempered steel, like that of the common truss.

The cushion is to be stuffed with horse hair, and ought to be, generally speaking, about six inches in length by three in breadth. Its thickness must be adapted to the individual case, that is, the greater the degree of relaxation of the soft parts at the outlet of the pelvis, the greater should be the thickness of the cushion. It is to be slightly tacked to the cross strap of the bandage, so as to press firmly upon all the parts requiring support. In some cases where the perinæum had entirely given way, the author has found it necessary to combine the prolapsus ani bandage with the cushion.

This bandage is to be worn whenever the patient is out of bed, as long as any symptom of the disease is perceived. It effectually relieves the unpleasant feelings, while it enables the patient to take walking exercise, which is so essentially necessary to the relief or cure of the disease.*

* One lady who had been for five years confined to the horizontal posture, had at once the use of her limbs restored by this simple contrivance.

By means of this bandage, the patient can stand, can sit, can walk, and even can ride with ease, and the pressure which it excites upon the weak parts, has a powerful influence in strengthening them, while, at the same time, it has the important effect of moderating or curing leucorrhœal discharge, without injury to the constitution.

After thus securing due support to the uterus, means are to be adopted to fulfil the second indication, viz., “ to increase the strength of the parts which are weak ;” and for this purpose, due regard must be paid to the age and condition of the patient, and to the causes of the disease.

Walking exercise, according to the author’s experience, is the most powerful mean which can be suggested for strengthening the natural supports of the uterus. Of course, where the patient has been much debilitated, or has been long confined to the horizontal posture, this exercise must be cautiously begun, but

whatever be the feelings of the patient, it must be gradually increased till it equal that which an individual usually takes in the ordinary state of health.

Cold bathing, and the use of internal tonics, are to be regarded as auxiliary means only, though in many cases which occur in actual practice, the previous mismanagement of the case renders their use necessary.

In young unmarried women, in whom the prolapsus has been the effect of over exertion, or of mechanical injury during menstruation, the daily use of the cold plunge bath, and of steady walking exercise, with the ordinary means of promoting the general health, will commonly cure the disease in the course of a few months.

Where the prolapsus has supervened to child-bearing, the same means will be found to relieve the symptoms, but there can be no chance of cure unless the patient again become preg-

nant. In that case, if suitable means be employed after delivery for the restoration of the whole of the uterine system to its natural condition in the unimpregnated state, the prolapsus will not again return.

The author has much reason to believe, that the process by which the uterus after child-bearing is restored to its healthy condition in the unimpregnated state (certainly a very wonderful one), has not hitherto obtained that attention from the profession which its importance demands. It is well known that innumerable individuals in the higher ranks never recover their original health after child-bearing; and every practitioner who has the charge of a public hospital or dispensary, must have occasion to see almost daily, cases among the lower ranks where various complications of diseases are evidently the effect of lying-in.

All those bad cases are to be attributed to inattention to the process alluded to. In delicate women in the higher ranks, the vascular

action is so feeble, that if unassisted, it cannot produce the necessary absorption of what had been added during pregnancy. In the lower ranks, on the other hand the exertions which their necessities compel them to make from a very short time after delivery, are apt to interrupt this necessary process, while they mechanically force the womb out of its natural position. Every attentive practitioner must have observed, that where healthy women of the lower ranks are duly attended to for a fortnight after delivery, as in well regulated lying-in hospitals, their recovery is more perfect at the end of a fortnight than that of women in the better ranks, under similar treatment, at the end of a month.

Prolapsus uteri, of long standing, in elderly women is to be treated as in young unmarried women; but it is the duty of the practitioner to explain that the T bandage must be worn for the remainder of life, an inconvenience trivial indeed when compared with the sufferings

arising from the use of pessaries, or from the disease being neglected.

The same observations apply to those distressing cases where the uterus falls down, in consequence of laceration of the perinæum or of the vagina. Many individuals, under such circumstances, who had been for months or years confined to the horizontal posture, are now in the enjoyment of general good health, and capable of all the ordinary enjoyments of life, by means of the T bandage and cushion.

ON POLYPOUS EXCRESCENCE OF THE
UTERUS.

By polypous excrescence of the uterus is meant a tumour, adhering by a peduncle to some part of the internal surface of the uterus or to its orifice, which is insensible on being pressed or scratched, and which is found to be of various sizes, from that of a filbert to that of an infant's head, and of various texture, from the softness of a clot of blood to the firmness of gristle.

Perhaps, in the majority of cases, this excrescence, for some time after its formation, produces no evident influence upon the patient, and in most instances little injury arises from the disease, till it have acquired a certain size. There are, however, occasional exceptions to this remark, which will be particularly adverted to in the progress of these observations.

It has been well remarked by the late Dr Gooch, that this disease is of more frequent occurrence than has been generally supposed. Indeed, there is reason to believe that many individuals die from this affection, in whom the nature of the complaint has not been even suspected, for in many cases the nature of the disease is so obscure as to mislead the general practitioner.

The most ordinary symptom of polypous excrescence of the uterus is an increased flow at the usual menstrual periods, accompanied sooner or later with a discharge of coagula. After a certain progress, there supervenes between the periods a continued drain, in more or less quantity, of what has been vulgarly called the whites, accompanied with sense of weariness in the back, and in some cases with a sense of pressure or bearing down, on walking or standing.

In the further progress of the disease, the draining from the vagina increases in quantity,

and becomes acrimonious and offensive. When this change happens, the state of the general health is rapidly impaired, œdematous swellings of the lower extremities follow, and if no effectual means be employed, the patient sinks exhausted.

Dr Gooch, in his valuable observations on this disease (page 266), states, that the ordinary fatal termination is a fit of fainting or convulsion from sudden increase of hæmorrhagy. It is singular that, with one exception, such cases have never occurred to the author of these observations, although he has been called to witness many fatal cases where the disease had been misunderstood.

But although the description above given marks the usual progress of the disease, many cases occur in practice where there is no such uniformity of symptoms. Thus, in some cases, many months elapse after the frequent uterine hæmorrhagy had indicated the existence of the disease before any draining from

the vagina during the intervals between the menstrual periods takes place.

In proof of this, the author may mention that he was called, some years ago, to see an unmarried lady, nearly fifty years of age, who for a considerable time had had excessive uterine hæmorrhagy, at what she considered the usual menstrual periods. She objected to any examination, and of course no remedies were suggested. At the distance of half-a-year, he was again called to visit this patient, in consequence of the periodical hæmorrhagy having become greatly aggravated, and of her strength being much exhausted. He found a polypous excrescence of the size of a newborn infant's head, which literally filled the pelvis. Yet, in the whole course of the disease, the patient had never had leucorrhœal discharge.

Previous to the occurrence of that case, he had been called to another patient of about the same age, who had for some years been liable

to profuse uterine hæmorrhagy, but whose case suggested no suspicion of polypus, till an accidental incapability of passing water led to an examination, when it was discovered that an enormous polypus, as large as in the former case, was pressing upon the external parts. That patient also declared that she had had no draining between the periods.

What adds to the obscurity of those cases is, that in some patients there is no hæmorrhagy at the periods; and as the draining or whites, which always attend in such cases, is so common a complaint of women, and is so often unconnected with organic disease, it is not wonderful that the existence of a polypous excrescence should not be suspected.

When the polypus has attained a certain size, it might be supposed that it should occasion pressure or bearing down, and yet this does not invariably happen. The patient from whom the largest polypus in the author's possession was taken, had, within a few weeks be-

fore falling under his care, walked up and down some of the highest mountains of Britain without inconvenience or fatigue.

Perhaps these discrepancies in the symptoms may proceed from the different relative situation of those excrescences in different cases, though this conjecture must be received with certain limitations. But to illustrate this, it is necessary to advert to the texture and locality of those excrescences.

With respect to the texture, Professor Davis has given a very minute description, which is highly interesting to the pathologist, but can be little useful to a practitioner of midwifery. It is sufficient for the latter to know, that in some cases the substance is as soft as a clot of blood, in others as firm as the hardest steatom, and that between these extreme grades there is every degree of consistence.

Dr Gooch has fallen into a great error on this point, evidently from deferring to the high

authority of Dr Baillie. He says, "The internal structure of polypus in most cases exactly resembles the internal structure of the large white tubercle of the uterus, commonly called the fleshy tubercle. They are the same disease, differing only in the seat and mode of their attachment, and consequently in the symptoms which they produce. On cutting into them we see a hard whitish substance, intercepted by numerous partitions."

In these observations Dr Gooch has mistaken the exceptions for the general rule. The author has not met with half-a-dozen such cases in the course of practice. Polypous excrescences, when of a large size, are commonly of a soft fibrous texture, with numerous loaded veins on their surface, a fact which Dr Gooch himself admits, for he says, "This, however, is not always its structure,—it is sometimes of a much softer and looser consistence, and sometimes has considerable cavities." And he further says, in describing a polypous excrescence, which he saw in the orifice of the va-

gina, "It was of a pale flesh colour, mottled, or rather striped with large blue veins, like the round balls of soap at the windows of perfumers," (page 257.) Nobody has ever seen such an appearance in a fleshy tubercle of the uterus.

Generally speaking, the shape of polypous excrescences of the uterus is globular or pyriform, adhering by a distinct neck or peduncle, but the author has met with a few cases where it was in the form of a small eel or serpent, without any regular peduncle. In one case this elongated excrescence was one inch in diameter, ten inches in length, and its loose extremity was forked.

It has been generally supposed that the external surface of those excrescences is a continuation of the membrane investing the internal surface of the uterus, but some preparations in the author's possession lead him to doubt this opinion. As this, however, is merely a matter of curiosity, it is unnecessary to state the cir-

cumstances which have led to the author's doubt on the established doctrine.

Another opinion of Dr Gooch, respecting the texture of those excrescences, seems equally erroneous. He supposed that the hæmorrhagy in those cases proceeds from the surface of the excrescence, and not from that of the uterus, and in confirmation of this opinion he appeals to the well known fact, that after a ligature is applied to the polypus, the hæmorrhagy ceases.

But the experience of the author leads him to entertain a very different opinion on this subject, for, in the *first* place, in no instance to which he has been called has there ever been any bloody discharge from the surface of the polypus, notwithstanding any liberty he might have taken in pressing upon it, or in attempting to twirl it round.

Secondly, He has seen several cases where frightful hæmorrhagy was apparently produced

by an excrescence, not larger than a filbert, attached to the inner border of the os uteri, and having a smooth polished surface.

Thirdly, He witnessed upon one occasion a case of fatal uterine hæmorrhagy, three weeks after delivery, where the only apparent cause was a polypous excrescence, not larger than a horse bean, situated upon the internal posterior surface of the uterus, about three inches above the orifice.

The author is therefore inclined to explain the cessation of the hæmorrhagy, after the application of the ligature round the excrescence, upon a very different principle from that adopted by Dr Gooch. He presumes that, when the tumour is in a state of growth, there must be a certain unusual determination of blood to the vessels which nourish it, but this cannot take place without an increased flow also being directed to the uterine vessels. Indeed there is perfect evidence of this, for the uterus keeps pace in increase of size with that of the tumour. Now

if there be an increased determination to the uterine vessels, such is their texture, that very slight circumstances must produce a discharge from them.

When, however, by the application of a ligature, the growth of the tumour is arrested, and its life, as it may be called, destroyed, a determination of blood to it can no longer take place, and of course the uterine arteries are no longer overloaded.

The locality of these excrescences has, perhaps, more influence upon the symptoms of the disease than either the size or texture.

In some cases, the peduncle is inserted in the internal surface of the fundus uteri. Dr Denman, many years ago, published a delineation of the appearances on dissection, where the weight of the tumour had inverted the unimpregnated uterus. The preparation from which that drawing was taken is in the author's collection.

More commonly, the peduncle is on one side of the uterine surface, sometimes attached to the neck, sometimes even to the lip. The author has now met with two cases in practice, where a polypous excrescence, attached to the os uteri, was distinctly covered by the investing membrane of the vagina. One of the patients, a respectable farmer's wife, was the mother of eight children. She had for several months suffered from occasional uterine hæmorrhagy, and a constant offensive draining from the vagina, and was so much reduced in strength, that she could no longer walk. The excrescence was about the size of a hen's egg, with a very thick peduncle. Its surface was perfectly smooth, and although evidently covered by the investing membrane of the vagina, it was quite insensible to the touch.*

When the excrescence is attached to the in-

* The patient's health was rapidly restored on the removal of the tumour, but he has been informed that she now labours under some other uterine affection.

ternal surface of the body of the uterus, it must be more apt to occasion hæmorrhagy, than where its attachment is at or near the orifice, and when, from the increase of size, it is forced into the vagina, it must produce that draining which at first is so apt to be confounded with the ordinary leucorrhæal discharge.

Polypous excrescence, like prolapsus uteri, can only be distinguished from other diseases by actual examination, a circumstance which accounts for the many victims of the disease in this part of the world at least, where the feelings of unmarried women lead them to refuse their consent to this mode of investigation.

From prolapsus uteri, there is little difficulty in distinguishing polypus. In many cases, the shape of the tumour of prolapsus uteri would at once point out the distinction; but there are more certain marks which young practitioners must keep in recollection, viz. :—*First*, the opening at the apex of the tumour, which is the os uteri. *Secondly*, the sensibility

to pressure. *Thirdly*, the relief experienced by the patient in pressing up the tumour. *Fourthly*, the facility with which the investing membrane of the vagina can be ascertained to cover the tumour.

In the polypous excrescence, on the contrary, neither pressure with the finger, nor even scratching, produces any unpleasant sensation while there is no aperture at the apex, and the vagina is ascertained readily to form a distinct canal.

Sir Chas. M. Clarke remarks, (page 227), that the only diseases which can be mistaken for polypus are, an inverted uterus, and the cauliflower excrescence of the os uteri. Dr Gooch more correctly substitutes malignant tumours for cauliflower excrescence.

Partial inversion of the uterus after delivery, if not immediately fatal, may, to a superficial observer, communicate the idea of polypus uteri. This mistake cannot readily happen, if

the patient be in the better ranks of society, because the practitioner can learn pretty accurately the history of the case. But in patients of the lower ranks, no such accurate information can be obtained. By examination, however, the diagnosis can be at once established. In partial inversion of the uterus, the shape of the tumour resembles that of polypus, but on its surface being pressed upon, in examination, the finger is besmeared with blood, which does not happen in any case of polypus.*

Cases of partial inversion of the uterus after delivery, are, in the present improved state of practice, rare occurrences, and when they do happen, they generally prove immediately fatal. In the whole course of the author's practice,

* Dr Denman, many years ago, published the delineation of the appearances on dissection, in a case where a patient survived the partial inversion of the uterus after delivery for four or five months; and, in the author's collection, there is a preparation exactly similar, taken from a patient who had survived that unfortunate accident above ten months.

he has not met with more than six or seven instances where the patient survived the accident above an hour or two.

Malignant excrescences of the uterus, although not of frequent occurrence, are occasionally met with, and may be confounded with polypous excrescence. Levret described these many years ago, under the title of *Vivaces*, and Mons. Herbiniaux of Brussels, has also given a description of such excrescences, in his Treatise on Polypus, published at Brussels in 1782, page 38, as quoted by Sir Chas. M. Clarke.

Both Levret and Herbiniaux have described only one kind of malignant excrescence, viz., that which has a soft texture, is insensible, adheres by a broad base, and is accompanied with enlargement and painful condition of the uterus. Sir Chas. M. Clarke styles this disease, the cauliflower excrescence.

Several cases of this affection have fallen

under the author's notice. It is accompanied with occasional excessive hæmorrhagy, and during the intervals of such discharges, there is a continued offensive ichorous draining, which gradually impairs the health. Although invariably fatal, its progress in many instances is slow, and the fatal termination is generally preceded by many of the symptoms which characterize cancer, so that the approaches to death are painful beyond description.

In one case which fell under the author's notice some time ago, the patient had been liable to occasional floodings for two years. She was the mother of three children, and was not above thirty-three years of age. She lingered under the disease for above two years after that date.

From the total insensibility of the excrescence, and the age and healthy constitution of the patient, the author was tempted to remove the excrescence, and to apply various local remedies to the uterus. For a time these

means seemed successful, and the patient was enabled to go again into society, but by and by the fungus again sprouted, and for many weeks before death the sufferings of the patient were indescribable.

Cauliflower excrescence, by which Sir Chas. M. Clarke designates such malignant tumours, is an incorrect expression, and may mislead inexperienced practitioners. The term implies both a granulated and a firm surface, whereas, in by far the greater number of those malignant excrescences, the surface communicates the feeling of a firm clot of blood, or rather of a collection of firm clots of blood.

There is, however, an excrescence common both to the vagina and to the os uteri occasionally met with, which has really a granulated and firm surface like that of cauliflower, and which requires to be distinguished. It is of the nature of a collection of warts, and differs from the malignant cases by there being no pain in the parts to which it is attached. This ex-

crecence always admits of a cure, for the diseased parts can be readily separated by the fingers, and the application of savine ointment to the surface to which it had adhered prevents a return to the disease.

This warty excrescence, as it may be called, usually occurs towards the decline of life ; but the author, some years ago, saw a case where the patient was under twenty-five years of age, and was in the sixth month of pregnancy.

Another kind of excrescence with a granulated surface, upon one occasion fell under the author's observation. The patient was in the fiftieth year of her age, and had been long married without having had any family. He learned that for six months she had been affected with constant draining of offensive ichorous matter from the vagina, attended with stinging burning pain in the region of the womb, and with occasional hæmorrhagy. She was then in a state of great emaciation and

debility, but he was assured that, previous to her present complaints she had been a plump healthy woman.

On examination, he ascertained that the uterus was enlarged and painful, and that it contained a firm granulated globular tumour about the size of an orange. Its surface adhered so slightly to the whole interior of the uterus, that he had no difficulty in bringing it away with his fingers. No alleviation of the symptoms followed, and the patient sunk in about six weeks.

One case which the author met with, might lead to the supposition that sometimes malignant fungus and warty excrescences may co-exist. The patient had long had an offensive discharge per vagina, and when she fell under the author's notice, it was at once ascertained that she had a polypous excrescence attached to the internal surface of the uterus. This was removed by the usual means, and for some time the patient's uterine health seemed re-esta-

blished. By and by, however, the offensive discharge per vaginam again began, and gradually increased both in quantity and acrimony, in so much that the external parts were ulcerated. Under these circumstances the author was again called to see this patient. He found a large spongy mass, with a granulated surface, as if covered with warts, adhering to the os uteri, and the upper part of the vagina, while the uterus itself was considerably enlarged and exquisitely painful to the touch. Palliative means gave temporary relief, but the patient survived only a few weeks.

Fungus hæmatodes is another variety of malignant excrescence, of which the author has seen several cases. It adheres by a broad base, has a smooth surface and a spongy feel.

All these varieties of malignant excrescences may be distinguished from the true polypus uteri by their having no peduncle, and by the uterus being always swollen and painful to the touch.

There can be no difficulty in understanding the injury to health produced by malignant excrescences of the womb, but the author was for many years puzzled to account for the rapid declension of strength which occurs in many cases of true polypus, even where the hæmorrhagies have been neither frequent nor profuse. At last a case occurred which seemed to him to explain the circumstance.

He was requested to sanction the operation in the case of a lady between thirty and forty years of age, then under the care of an eminent surgeon. There could be no doubt on the propriety of the practice, but the surgeon, much against the author's advice, insisted that the general health of the patient should be improved before the application of the ligature, and with that view recommended a course of tonics. The patient suddenly and unexpectedly sunk within the week.

When the body was examined, the abdominal muscles appeared covered with a thick

layer of fat, and every part except the uterus was sound. A polypous excrescence about the size of a large pear was seen adhering to the internal surface of the uterus, and round its peduncle to the breadth of half an inch a distinct ulceration was manifest. In the author's opinion, a morbid poison had issued from this ulceration, the absorption of which had occasioned death.

On this principle, both the extraordinary prostration of strength which is the consequence of polypus uteri, and the fatality of the disease when it is neglected can be explained.

Candour, however, leads him to state, that, in the early part of his professional life, he saw several cases where, from the size of the polypus, an operation was deemed impracticable, and where, nevertheless, life was protracted for several years. In one case, the patient, an unmarried woman between thirty and forty years of age, lived seven years after the whole pelvis was filled with the tumour, in so much that the

sufferer had been obliged during all that time to empty the bladder by means of the catheter.

This case, however, was not attended with the excessive debility which commonly accompanies the disease. Its termination was by dropsy, which perhaps may have been occasioned rather by the mode of living than by the disease, for the patient above alluded to had, for years before her death, indulged in large doses of opium and ardent spirits. She had been accustomed, for at least three years before she sunk, to take daily four ounces of laudanum, and very often an English pint of ardent spirits.

Respecting the prognosis in cases of polypus uteri, the author's experience leads him to differ from the late Dr Gooch, who says, " If mistaken and neglected, it occasions the death of the patient; if detected and removed, she not only lives but regains perfect health. The case of polypus of the uterus affords one of the most striking instances of the triumph of our

art." In both these propositions, Dr Gooch has expressed himself too strongly.

Conceding that neglected cases must usually end fatally, there can be no doubt of the fact (for it has fallen under the author's observation) that sometimes, by an effort of nature, the polypus is separated and expelled, either in the act of vomiting, or by strong expulsive uterine pains. In the author's collection, there is a very large polypus which had been thus naturally thrown off in the case of an unmarried lady, and her health, which had been previously much impaired, was completely restored.

On the other hand, the removal of the tumour, even although safely effected, does not invariably secure the recovery of the patient, of which the author has witnessed the three following remarkable instances.

A very robust woman between forty and fifty years of age, who had had a family, but was then in the capacity of a servant, was several

years ago brought into the Royal Infirmary here, in consequence of the sudden protrusion of a bulky body through the vulva, which had been occasioned by a violent exertion in the exercise of her duty. The author was requested by the medical officers of the institution to visit her, and he ascertained what he had never seen before, nor has ever seen since, that the protrusion was a double-headed polypus, like two large globe pessaries, adhering by a single stem. A ligature was applied by the attending surgeon, the late Dr Wardrope, and in four days the polypus dropped.

After the operation, the patient, by the existing regulations of the hospital, was placed in the servant's ward, and consequently, after the dropping of the tumour, she was no longer under the charge of the surgeon. On the second day after this, she was found to be labouring under Enteritis in a very violent degree, and she died within twenty-four hours.

Some years after this occurrence, the author

was requested to visit a lady (the mother of a family) in the forty-ninth year of her age, who stated, that for six months she had had a variety of complaints which indicated some uterine disease. On examination, it was ascertained that there was a polypous excrescence of the size of a hen's egg, attached to the internal surface of the uterus by a narrow peduncle. The patient not only readily assented to an operation, but urgently requested that it should be performed without delay. Within an hour, therefore, the ligature was applied, and the tumour dropped at the end of the third day.

There having been no relief from the bowels from the date of the operation, a dose of castor oil was prescribed on the day after the ligature came away. When the author paid his second visit that day (about five of the afternoon), he found the patient complaining of pain in the bowels, which she herself attributed to the operation of the medicine, and to the previous constipation. But the pain having become aggravated in the course of the evening, the family

medical attendant, a most judicious Practitioner, was sent for. He considered that enteritis had taken place, and bled the patient accordingly. When the author saw her two hours after this, he found her still in pain, with an imperceptible pulse, and she sunk in a few hours.

In the third case, the circumstances were still more unexpected. The lady was above sixty-five years of age, and the author had succeeded in separating a polypus of a larger size than he has ever seen in any collection as having been removed from the living body. This lady seemed so remarkably well after the polypus dropped, that she changed her lodgings merely as a matter of taste. Within the week she was seized with a deep seated pain in the chest, unaccompanied with cough, but with a frequent pulse. A copious bleeding, with antimonials and laxatives, quickly relieved the pain. On the following morning, the convalescence seemed established, for there was no pain, and the pulse from one hundred and twenty, had

subsided to ninety-two in the minute. The author's fears having been excited from the result of the two former cases, and the patient being a remarkably stout person, about fourteen ounces of blood were drawn, professedly as a measure of precaution, and the low diet and antimonial medicines were directed to be continued. Next day the patient was so much better, that she insisted on having an improved diet, which however was agreed to only in a limited degree. She continued apparently well till bedtime, when delirium, with an affection of the breathing, suddenly supervened, and she expired within four hours.

Notwithstanding those cases, Dr Gooch's general eulogium on the success of the operation, may be admitted, on the supposition that the operation is properly performed, for in many cases it is one of the most difficult and dangerous operations of surgery, and from the experience of the author, he is compelled to dissent from the opinion of Dr Gooch, that "any surgeon with a proper instrument is

competent to remove the polypus.”* The author has not only operated on several patients who had been dismissed from public hospitals as incurable, but he has seen some of the most eminent practical surgeons of this part of the kingdom foiled in their endeavours to apply the ligature.

With respect to the causes of those excrescences, several very ingenious speculations have been published, but all conjectures upon the subject are unnecessary in a practical point of view, it being sufficient to remark, that neither peculiarity of constitution nor mode of living can account for those excrescences. The author has seen as many cases of the disease in virgins as in married women. He has seen several cases where individuals from whom he had separated polypi in their virgin state, had afterwards, on being married, children without danger or difficulty.

* Gooch, page 261.

British practitioners have now universally agreed, that the safe mode of operating in those cases is by ligature, though several eminent French surgeons have lately preferred the double operation of tying the polypus, and then cutting it off. This latter practice, however, must be impracticable in many cases, and *may be* dangerous, whereas the only danger attending the ligature arises from the risk of including a portion of the uterus, and the French operation does not afford any better chance of avoiding that hazard than that adopted by the British.

For the application of the ligature, many ingenious mechanical contrivances have been invented, but the author has always employed the most simple means, and, during the last forty years, he has never been foiled in his endeavours.

Silver wire possesses two most important advantages over every other kind of ligature, for it can be applied over the largest polypi by the

fingers alone, without any of the complicated mechanical contrivances which have been proposed, and it can be drawn down to the very surface of the excrescence, thereby precluding the chance of involving the uterus.*

Inexperienced practitioners cannot, perhaps, duly appreciate the former of these advantages, for the various instruments invented for tying polypous excrescences appear so ingenious, and are recommended with so much confidence by the inventors, that they cannot imagine that such means should fail. The author has already stated, that he has repeatedly succeeded in applying the ligature and removing the polypus in cases where patients had been dismissed from public hospitals as incurable, and in all those cases, he has attributed his success to the use of the silver wire.

* Professor Davis, page 637, *et seq.*, has recorded several cases where the uterus was included in the ligature and proved fatal. In those cases waxed thread must have been employed.

It has been already explained, that the great danger of the operation arises from including some portion of the uterus in the ligature, but if silver wire be employed, such an untoward occurrence must be owing to the awkwardness of the practitioner, whereas, if a waxed thread be preferred, no dexterity of the practitioner could furnish a security against this accident, for the plain reason, that the lubricity of the silver wire facilitates its being drawn down to the very upper surface of the excrescence, whereas a waxed thread must adhere to whatever spot it is applied.

Upon these principles the author has always employed silver wire as the ligature. Having upon more than one occasion, in the early part of his professional life, taken the silver wire furnished by the cutlers, he was foiled at first in his endeavours to remove the excrescence, in consequence of the wire having given way in consequence of containing copper alloy, and therefore, for the last thirty years, he has been accustomed to employ pure silver wire

drawn of the thickness of the third string of a violin.

His mode of operating in those cases is very simple. Where the polypus is small, he carries up a noose of the wire by means of Levret's double canula, but where it is large, he takes the wire, and with his fingers presses it up round and round till it be carried above the bulky part of the tumour. He then, without crossing the portions of the wire, draws down as far as the tumour will permit. The ends of the wire are then passed through the double canula, and drawn tightly till the patient complains of pain, when they are fixed round the rings of the canula. On the following day the ligature is again tightened by drawing with pliers one side of the wire, and the same operation is repeated every day till the tumour drop. In the meanwhile, the canula is covered with lint, and the patient (who is necessarily kept under low diet and in bed) is directed so to support the canula in the act of making water, or having relief from her bowels, as

to run no risk of prematurely forcing off the excrescence. It may be remarked, by the by, that no imprudence upon her part could do any other injury, which is an additional argument in favour of the safety and the superiority of this very simple mode of operating.

By the cautious proceeding of desisting from tightening the ligature whenever pain is felt, all risk of injury has been avoided in the author's practice, but it has repeatedly happened that above a fortnight has elapsed between the application of the ligature and the dropping of the excrescence. In some of those cases, the wire has been drawn to such an extent, that there only remained what filled the canula, and yet the polypus was not separated. In those cases a second wire was easily applied, and the excrescence dropped next day. In one case, some time ago, where this happened, it was found that the polypus was held so firmly by the first canula, that it required a pen knife to separate it, and yet the aperture of the wire could not admit more than a bodkin. This

case suggested to the author the contrivance of a triple canula, and this he has used ever since. The ends of the wire are drawn through the outer canulæ, and the middle one is left for the purpose of passing up a sharpened wire to cut the peduncle if necessary.

In unmarried women, if the polypus be of a large size, there is considerable difficulty in extracting it after it has been separated from its attachment. Thus, in two different cases where the polypus was of the size of an infant's head, it became necessary to use the perforator and crutch, and even with the assistance of those instruments, the operation proved a very tedious and a very painful one. In both instances it required considerably above an hour before the extraction was completed. The subjects of those most difficult and painful operations now enjoy good health.

ENLARGEMENT OF THE OVARY.

One of the most common local diseases peculiar to women, is enlargement of the ovary, and it is met with in subjects of every age, from puberty up to above the eightieth year. No constitution seems exempt from it, and virgins as well as married women are liable to it. It does not prevent pregnancy, nor does it seem to be influenced by the barrenness of married women.

Before there be any direct evidence of this disease, it has generally made a certain progress, and although there may be some data, from the appearances in dead bodies, for conjecturing the phenomena of the early stages of the disease, practically speaking, a considerable advance must always have taken place before either the patient or the practitioner can be aware of its existence. That there may be

exceptions to this remark is not denied, and the author readily admits that he has seen such, and he well recollects two remarkable instances.

Of these, the first was an unmarried lady, twenty-seven years of age. She was apparently in good health ; but in the act of being dressed for a ball, at a time when tight lacing was the fashion, she screamed out that her maid hurt her on pressing on a particular point of the left side. This led to an examination of the seat of pain, and it was discovered that, upon the left side of the belly, there was a circumscribed tumour of the size of a goose egg, slightly painful to the touch, and which eventually proved to be the left ovarium.

In the second case, the lady was newly married, having been apparently in good health, but within the fortnight after marriage, it was discovered that there was a circumscribed enlargement at the lower part of the belly on one side, and great alarm was naturally excited. This lady has had a family, and the enlarge-

ment has continued stationary for above forty years.

Some other cases have fallen under the author's notice, where, from the occurrence of accidents, or of inflammatory or spasmodic affections, it had become necessary to examine the state of the abdomen, and a small circumscribed enlargement had been discovered. In one of those cases the tumour remained stationary for fourteen years, at the end of which time the patient died from an acute inflammatory affection, and the tumour was found to be a steatom adhering to the mesentery. In the other cases, symptoms of diseased ovary gradually took place.

With these exceptions, the first evidences of the disease in most cases are either an enlargement of the belly, or a deep seated pain towards one side of its lower part, with sense of numbness in the corresponding lower extremity. But in many instances, no apprehension of the nature of the disease is enter-

tained by the patient, till she feel a decided increase of bulk, with a difficulty in stooping or in moving about with her usual alacrity. Married women not unfrequently mistake those circumstances for evidences of pregnancy.

Few local diseases vary so much in their progress in different cases as that under consideration. Innumerable instances occur in practice, where the disease neither injures health nor shortens life. On the other hand, in many cases, after a certain progress, painful and alarming symptoms suddenly supervene, and prove rapidly fatal. Between these two extremes, every variety is met with. The author has repeatedly seen cases where the disease had existed, without even inconvenience to the individual, for half a century, and he has seen other cases where the patient sunk within a year after the first discovery of the enlargement.

Several patients whom the author has attended, have had a family while labouring under this disease. In two cases a spontaneous cure

happened under such circumstances. In one of the cases (the patient being then in the twenty-eighth year of her age) the enlargement disappeared after the birth of her fourth child, but it had begun to subside before pregnancy. The circumstances of the other case were more remarkable. The lady had two unmarried sisters, who had long been affected with enlargement of the ovary, and who eventually died from the disease. After this lady was delivered of her sixth child, it was discovered that the left ovary was enlarged to the size of a cocoa nut, and the author augured most unfavourably of the event. She again became pregnant, and after the birth of her seventh child, the enlarged ovary could be no longer felt. She has since then continued in perfect health, and above fifteen years have elapsed.

Several individuals within the author's knowledge, have dragged on a miserable existence under this disease for between twenty and thirty years, although the bulk had become so great, that the size of the belly equalled that of

a pregnant woman at the full time. These discrepancies in the progress and symptoms of the disease are explained only by what is observed after death, for it seldom happens that, during life, there are any marks by which the probable course of the disease can be foretold.

Various changes of texture occasion enlargement of the ovary, and a knowledge of these cannot in general be acquired during the life of the patient. Dr Baillie, in his *Morbid Anatomy*, has given an excellent enumeration of those changes. They may be briefly stated to be the following :—

Firstly, A fibrous texture without any cavity, constituting a parabysma.

Secondly, An accumulation of interstitial fluid within the proper coat of the ovary.

Thirdly, An accumulation of fluid of different degrees of consistence in cysts or sacs.

Fourthly, A collection of hydatids of various sizes.

Fifthly, A complication of fatty tumours with hydatids.

Sixthly, Indurations like schirrosities complicated with the cysts, or sacs or hydatids.

From this enumeration of the morbid conditions of the ovaries, the discrepancies in the symptoms and in the progress may be explained. For example, a fibrous parabysma may proceed so slowly in its growth, that many years may elapse before it at all injure health, of which the author has seen many cases. One of the most remarkable cases has occurred lately in the practice of his friend, Dr Walker of Dollar. The patient had laboured under the disease for nearly twenty years, and till within a few months of her death had enjoyed tolerable health, but the parabysma after death weighed thirty-one pounds.

A partial accumulation of the interstitial fluid may exist for years without producing any morbid effect. Even a collection of fluid within cysts or sacs may for years occasion little inconvenience, but in general such collections are apt to increase, and to make injurious pressure on the neighbouring parts. The same may be said of hydatids, which have been found of various sizes, from that of a garden pea to that of an orange.

Indurations, especially if complicated with cysts, are apt to become inflamed, and hence to occasion pain and fever. Suppuration within the cysts is not uncommon, and necessarily adds to the sufferings and the danger of the patient.

Enlargement of the ovary, even after a certain advance in its progress, is with great difficulty distinguished during life. It may be confounded in its early stages with tubercles of the mesentery or of the peritonæum, with schirrosity of the pylorus or of the caput cœcum

coli, with collections of indurated fœces in that portion of the intestinal canal; and, in the latter stages, with ascites and pregnancy.

Tubercles of the mesentery or of the peritonæum, where they have attained the size of a large apple, may certainly at first be mistaken for a disease of the ovary, and their true nature can only be determined by the slowness of their growth, and their being generally unaccompanied with pain. The author has seen a few cases where such tubercles had no increase of bulk, for from fourteen to twenty years, and where their true nature was not ascertained till after death.

That schirrosity of the pylorus could be mistaken for an enlargement of the ovary, may appear incredible to those who acquire their knowledge of diseases from reading books. But the author met, several years ago, with one case which strongly illustrates this point, and a few other cases have been communicated to him by professional friends. He was requested

by an old pupil to visit a poor woman, the wife of an operative blacksmith, who was supposed to be in great danger, in consequence of an extra uterine conception. In proceeding to the dwelling of the patient, he was assured that the head and chest of the infant could be plainly distinguished, but that the limbs could not be felt. On examination, he found a large indurated tumour, very much of the shape which had been described, situated in the right iliac region, and reaching as low as the groin. It was exquisitely painful to the touch, and the poor woman appeared in the last stage of marasmus. He had no doubt that it was a diseased ovary, and that the sufferings of the patient admitted only of palliatives.

Death relieved the poor woman in the course of a few days, and it was then found, to the great surprise of those assembled to witness the dissection, that the disease was schirrosity of the pylorus of great magnitude, and which had actually fallen down as low as the groin.

Reasoning on the subject could never lead one to suppose that schirrosity of the caput cœcum coli could be mistaken for enlargement of the ovary. Yet a case of that kind fell under the author's notice within these twenty years. The patient had been attended for some time by two most experienced general practitioners. She was between the fortieth and fiftieth year of her age, and had been for several months in bad health. When the author was consulted, she laboured under all the ordinary symptoms of a broken constitution, with a very considerable degree of increased action of the heart and arteries, and great prostration of strength. When the state of the abdomen was examined, the only deviation from the ordinary structure which could be detected, was a spheroidal indurated tumour about double the size of an orange, situated on the right side of the lower part of the belly, quite indolent, and not only moveable, but communicating the feeling, on being pressed upwards, of drawing up the vagina, a feeling which the author had at that time suppos-

ed to indicate generally an enlargement of the ovary.

Taking all the circumstances into consideration, the author's opinion certainly was, that there was an enlargement of the right ovary, and that the constitutional symptoms were occasioned by the mercurial medicines which she had been taking for several weeks. He therefore advised the ordinary means for the alleviation of symptoms which supervene to the use of mercury, but the patient sunk in the course of a short time. The caput cœcum coli was found to be the seat of the disease. Its coats were greatly thickened and decidedly schirrous. In this case the author was assured by the medical gentlemen in previous attendance, that there never had been a symptom indicating any disease of the gut.

A case where an accumulation of indurated fœces in the caput cœcum coli might have been mistaken for enlargement of the ovary, occurred, within these few years, to his friend Dr

John Moir, who requested the author to visit the poor woman. He found her suffering from a circumscribed moveable indolent enlargement of the right side, communicating the feeling of what is generally characteristic of enlarged ovary. As the woman was in the lower ranks of life, she had had no leisure to attend to the first approaches of indisposition, and therefore, could not give a distinct account of the progress of her disease. She said that she had been under the care of some medical men, who had twice cupped her on the seat of the swelling. It was therefore with some hesitation that the author pronounced it a case of accumulated fœces. The hint was followed up by Dr Moir, with his usual assiduity and zeal, and he had the satisfaction of seeing the patient restored to perfect health in three or four weeks.

Having thus stated the difficulty of distinguishing enlargement of the ovary in the early stages of the disease, it will naturally be expected that the author should point out the

means by which such mistakes may be avoided, but he regrets to say, that he can give no general rules by which this most desirable object may be accomplished. At one period of his life he certainly believed, as already mentioned, that he had discovered a diagnostic mark, viz., that whenever a circumscribed indolent moveable tumour within the abdomen, on being pressed upwards (the patient lying in the horizontal posture), occasioned the sensation of the drawing up of the vagina, the disease was ovarian. But he has now seen so many exceptions to this rule, that he has no longer any confidence in it. He is convinced that it is seldom possible to distinguish the early progress of enlarged ovary.

However incredible it may appear, there can be no doubt that, in the advanced stages of enlargement of the ovary, the disease has been confounded with ascites and with pregnancy. It might be easy to account for such mistakes in cases of the lower ranks, for such patients cannot be expected to give an accurate or faith-

ful account of the progress of the symptoms. But many instances have fallen under the author's notice, where individuals of the better ranks have had such complications of symptoms, and have given such a confused account of their disease, that general practitioners of the highest respectability have been deceived.

Ascites is certainly, in by far the majority of cases, preceded by such symptoms of indisposition, and accompanied by such marks of impaired health, that an experienced practitioner can ascertain the disease almost by the glance of the eye.

But it now and then happens, that after enlargement of the ovary has been advancing insidiously for a considerable length of time, it suddenly increases in size, and by its injurious pressure upon the abdominal viscera, it occasions various modifications of dyspepsia, and in some cases even a slight degree of jaundice. This complication cannot fail to perplex the practitioner.

For many years of his professional life the author believed that, where there was distinct fluctuation within the abdomen, he could always distinguish dropsy of the ovarium in this way. Placing the patient upon her back quite horizontally, he considered that if he could feel the fluctuation at the lowest possible point on each side of the belly, the case must be ascites; for in dropsy of the ovary the intestines must be interposed (as in the case of the gravid uterus) between the seat of the disease and the spine, and consequently the fluctuation could not reach the most dependent part of the cavity.

Further experience, however, has led him to doubt the accuracy of this test, for he has seen several cases which convince him that no reliance can be placed upon it as an invariable rule. He has been, therefore, compelled to adopt a method of distinguishing such cases, which unequivocally determines the true nature of the case. It occurred to him, that whenever there is such a distension of the abdomen, with evident fluctuation, as to render it doubtful whe-

ther the disease be ascites or dropsy of the ovary, the operation of tapping might be useful, and could not be hurtful, and that the result of the operation must decide the nature of the case. The peculiar appearance of the fluid, which in dropsy of the ovarium is commonly amber coloured, and of the consistence of melted calf's-foot jelly, but more particularly the collapsed sac, distinctly perceivable on the day after tapping, like the contracted uterus on the day after delivery, afford certain evidence of dropsy of the ovarium.*

* For above thirty years, the author was accustomed to mention, in lecturing, that the appearance and qualities of the fluid drawn off in the operation of tapping the ovarium, were very different in different cases,—that, in the greater number of cases, the fluid was amber coloured and gelatinous, with occasionally fatty follicles,—that, now and then, it was dark coloured like port-wine, and that, in a few cases, he had seen it as black as ink. He added, that he had repeatedly known, in the same patient, cysts containing those different fluids, and that he had never seen in any diseased ovary the fluid of a serous nature similar to that in ascites. He therefore believes that he was the first to describe the curious disease called by the French *Melanose*.

Unmarried women who have unfortunately gone astray, naturally practise every means of deceiving the practitioner, and it requires considerable caution to guard against such impostures. Unless a careful examination of the enlargement be instituted, no medical man is warranted in giving an opinion from the report of the patient.

Cases, however, occasionally occur, which must tend to embarrass a practitioner. Such are cases where there is a certainty or presumption of an enlarged ovary, and where there are at the same time symptoms of pregnancy. It has been already stated, that disease of one ovary does not prevent conception, and therefore, in every case where there is a chance of the patient being pregnant while labouring under a disease of the ovary, it is the duty of the practitioner to ascertain, by examination, the state of the uterus. If there be enlargement of the ovary, independent of pregnancy, the uterus will be found forced so low down into the vagina,

that its actual condition cannot be misunderstood.

In some cases to which the author has been called, the practitioners have trusted to the state of the menstrual discharge, but experience has convinced him that no reliance can be placed on that criterion. In many cases of diseased ovary, the catamenia have been quite regular, while in others they have been suppressed.

The prognosis in cases of diseased ovary, is more difficultly formed than in almost any other organic disease. Indeed, it is impossible in any given case to foretel the probable progress. Out of a great number of cases which have fallen under the author's observation, he selects the following, in illustration of this general proposition.

An unmarried lady, in the thirty-sixth year of her age, consulted the author's father on the safety of her accepting an offer of mar-

riage, considering that she had a circumscribed tumour on the left side of the belly, a little larger than a new born infant's head. Her general health was excellent. This lady married, but had no family. At the distance of forty-two years from her marriage, the author was called to attend her, in consequence of a febrile affection, and he surprised her by mentioning the enlargement. She then stated, that it had remained stationary, and had never occasioned her any inconvenience. He actually found it to be exactly of the same size as his father had described.

A married lady who had had a family, was found, at the decline of life, to have dropsical ovarium, to such an extent that there was a perceptible fluctuation, but her general health continued good, and for several years she suffered no inconvenience from the enlargement. At last, however, in consequence of a severe catarrh, the ovarian sac suddenly burst during a violent fit of coughing, and she sunk in a few hours.

Another married lady, after having had one child, never again conceived, but continued for many years to enjoy good health ; at last she felt a deep seated pain in the left side, and, on examination, a circumscribed tumour, about the size of a child's head, with an unequal surface, and painful to the touch, was perceived. The usual evidences of broken health quickly followed, and the patient was pronounced by the late Dr Munro, and the author's father, to be in imminent danger.

Without any apparent cause, the alarming symptoms gradually abated, and for above fourteen years this lady enjoyed general good health.

Gradually, however, the pain in the left side returned, febrile symptoms eventually supervened, and when the author was called in, he found her case, as he supposed, desperate. She was delirious, with almost incessant vomiting ; she had burning skin, with a pulse above an hundred and forty ; she occasionally screamed

out, and during any temporary sleep had constant moaning, and the abdomen was much distended, and exquisitely tender to the touch. These symptoms, contrary to all expectation, abated so much, that the patient was brought to Edinburgh from a considerable distance. Four months afterwards, the operation of tapping was had recourse to, and two wash-hand basins full of purulent matter were drawn off. This patient dragged on a miserable existence for fifteen months longer.

Two sisters, unmarried ladies, between twenty and thirty years of age, consulted a respectable medical practitioner, in consequence of a circumscribed enlargement upon one side of the belly. In the elder sister, it was found that the enlargement was smooth, of the size of an infant's head, and indolent. In the other sister, the enlargement was unequal on its surface, and was painful on pressure. In both sisters the enlargement gradually increased, so as to produce an unseemly size of the belly. In the elder sister no inconvenience

resulted, and her general health continued for many years to be unimpaired. The younger sister, on the other hand, from the time that the enlargement was discovered, was a constant invalid. For many years she was scarcely a dozen times in the open air, and that only during the summer season.

At last, after this disease had been ascertained to have existed for above twenty years, the author was called to see those patients. In both cases there was a prodigious enlargement of the abdomen, with universal œdima, but in the elder sister there was no pain upon pressure, while, in the younger sister, the slightest touch of the distended parts gave pain. The elder sister survived the other by some weeks, but in both instances, all attempt at the horizontal posture, for many days before death, threatened suffocation, and it became necessary, in order to relieve the breathing, to direct scarifications of the lower extremities.

About twenty-seven years ago, an unmarried

lady, in the fortieth year of her age, came to Edinburgh from England for a consultation, and the late Dr Monro and the author attended. The symptoms of her disease were most complicated, but after a minute and anxious investigation, it was believed that her complaints arose from two different causes not necessarily connected, viz., disordered function of the stomach and bowels, and enlargement of the left ovary to the size of the gravid uterus, at the completion of seven calendar months. The means recommended were calculated, in the first place, to relieve the affections of the stomach and bowels, and, in the second place, to retard the progress of the enlargement of the ovary. The former object was very quickly attained, and the general health of the patient was restored.

After a lapse of twenty years, this lady came to Edinburgh on a pleasure excursion, and when she told the author that the enlargement had totally disappeared, but in so gradual a manner, that she had been scarcely sensible of the change, his impression was, that she had been deceiving

herself. On examining the state of the abdomen next morning, however, he ascertained that there were no remains whatever of the enlarged ovary.

Such is the discrepancy of symptoms, and the uncertainty of progress in this disease, that it consists with the author's knowledge, that several individuals continue to live, and to have a tolerable share of health, who had for many years been confined to the house, and in whom the enlargement of the abdomen had become oppressive. In some of those cases, this change took place so gradually, that the patient could not account for her improved health. In a few cases, it followed the employment of some remedy, such as preparations of iodine or some patent medicine. The author's impression has uniformly been, that in all such cases the enlargement of the ovary had spontaneously become stationary, and the parts on which it pressed had, by some process of nature, become accommodated to the pressure.

Any discussions upon the causes of this disease could lead to no satisfactory result, because they are so obscure as to elude all investigation. A very general opinion has been entertained by the profession, that a scrofulous habit predisposes to the disease. The author's experience has not confirmed this opinion ; but, in making this observation, he does not mean to assert that those who have a scrofulous diathesis are not more liable to internal organic diseases than those who have no such tendency. He can declare that he has seen many cases of enlarged ovary where there was not the slightest vestige of a predisposition to scrofula. As to the notion that the disease may be produced by injuries during labour, the author has never had the slightest evidence of any such cause.

In modern times, the most respectable part of the profession have considered diseases of the ovary to be incurable. Professor Burns expressly says (eighth edition of his *Principles of Midwifery*, page 141), " I wish most distinctly to state my conviction that, beyond the object

of palliating symptoms, the medical art can at present not extend, and it argues, in so far as our skill at least as yet goes, a most unsupported confidence in the power of physic to propose more." Professor Davis says (page 767), " The author cannot pretend to recommend any medicine possessing an adequate curative power over ovarian dropsy."

That there are many cases of enlargement of the ovary, which admit only of palliative treatment, the author readily concedes ; but he can prove by many living witnesses, that cases now and then occur where the disease is curable, not merely in its early stage, but after it has attained such a magnitude as to require the operation of tapping.

Sixteen years have now elapsed since the author, after pointing out the inutility and perhaps the danger of courses of mercury in such cases, ventured to offer the following observa-

tions on the treatment of enlargement of the ovary.*

“ From the inutility or injurious tendency of the various means commonly employed in cases of enlarged ovarium, the author for many years confined his views in the treatment of that disease to promoting the general health, and to palliating distressing symptoms ; and as he not unfrequently saw instances where the local affection, after a certain process, became stationary, and ceased to give any uneasiness, he supposed that no other resource could be safely relied on.

“ Within these five years, however, he was induced, by particular circumstances, to make some experiments, for the purpose of determining whether the enlargements in question could possibly be removed ; and in doing so,

* Observations on the Use and Abuse of Mercurial Medicines in various diseases, by Dr James Hamilton, page 200.

he did not neglect the necessary precaution of avoiding every thing which could at all injure the general health.

“ Adverting to the effects of percussion and of pressure in chronic rheumatism, and knowing the influence of the continued use of the Muriate of lime, in indolent glandular swellings, he was led to the trial of those several means, as being at any rate perfectly safe. He advised, therefore, that moderate and equable pressure of the abdomen should be made by means of a suitable bandage ; that the enlarged part should be subjected twice a day to gentle percussion, and that a course of small doses of Muriate of lime should be continued for at least several months. Where pain or tenderness was experienced on the ovary being pressed upon, he recommended, in addition to the above means, the daily use of the warm bath.

“ This plan of treatment has been much more successful than he had anticipated. In seven cases in which it has been tried, the en-

largement has so completely subsided, that it is no longer tangible. There could be no mistake in the majority of those cases, not only because the size of the diseased ovary was very considerable, the fluctuation was distinct, and all the ordinary characteristics were well marked, but also because the nature of the affection had been previously ascertained by some of the most experienced practitioners in London.

“ In the first three cases, the author considered that there might be some accidental coincidence independent of the remedies employed, and therefore he did not venture to allude to them, even in lecturing, being always unwilling to give any hints which might lead to delusive speculations in the practice of physic. But the fortunate issue of four additional cases entitles him to presume that the above means of cure bid fair to prove extensively useful.

“ He may venture thus far, he trusts, with-

out the imputation of holding out ill-founded hopes on this subject ; but, to prevent all risk of misleading, he thinks it right to specify explicitly, that the difficulty of distinguishing the presence of hydatids, must, in every individual case, render the efficacy of the practice doubtful, even although further experience should establish the fact, that where the effusion is within the proper coat of the ovary, this method of cure invariably succeeds.

“ Previous to the diminution of bulk in all the successful cases, it is proper to add, that the circumscribed enlargement of the ovary has invariably become soft. This change was so remarkably obvious in the first of the successful cases, that the indentation of the patient’s finger upon it was similar to what occurs in anasarca, although it had been formerly quite incompressible. As the tumour extended as high as the right hypochondre, this important change was first perceived by the lady herself.”

His experience since that time has fully

confirmed the above remarks; having succeeded now, in a number of cases, in curing or retarding the disease, by the simple means above alluded to, viz., firm compression of the abdomen, percussion, the use of the warm bath, and a protracted course of the Muriate of lime, together with the ordinary means for promoting general health.

This additional experience has also confirmed the objections which the author urged, loco citato (page 198), against the use of mercury.

But, for the information of the junior part of the profession, the author feels that he ought to enter into a more detailed account of the result of his experience in this disease, and he therefore offers the following remarks.

Firstly, In two, or perhaps three cases of a circumscribed tumour not larger than an orange, upon one side of the lower part of the abdomen, he has known the enlargement disappear under a course of mercury, but there was no evidence

that the disease was seated in the ovary, and his own impression certainly at the time was, that it could not be so.

Secondly, In the cases where, under the treatment described (*loco citato*, page 204), the enlargement disappeared, that curious softening, occasioning pitting on pressure, occurred,* which he could not explain according to his view at that time, having supposed that he had perceived fluctuation in the enlargement. For, if the enlargement had been either a collection of interstitial fluid within the coat of the ovarium or an accumulation of gelatinous fluid in a cyst, the absorption of the fluid must have been attended with a corresponding shrinking of the sac in which it was contained.

But a case occurred sometime after those al-

* It consists with the author's knowledge, that the lady whose case is alluded to (page 204, *loco citato*), still enjoys good health, and has no vestige whatever of the disease. She had two living children after the disappearance of the ovarian affection.

luded to, which leads the author to believe that he had mistaken a parabysma for an accumulation of fluid. The patient, a married lady, twenty-five years of age, had a chronic enlargement of the uterus, to such an extent that it equalled the size of the gravid uterus at the end of the fifth month at least. In this case, the first evidence of the mode of treatment becoming efficacious, was the softening and pitting of the tumour. Within a month from that date, the uterus was reduced to its natural small size.*

Thirdly, He has seen many cases where every variety of diuretic medicines had been administered with great perseverance, without the slightest influence upon the disease.

Fourthly, Within these sixteen years he has been called to a few cases, where, after the enlargement had attained the size of an ordinary

* This patient had for a year been under the care of his friend, Dr Merriman of London.

melon, acute pain in the diseased part took place, accompanied with alarming symptomatic fever, and where, during the employment of the means necessary to alleviate those symptoms, the enlargement subsided, and eventually disappeared.

Fifthly, Experience has now therefore encouraged him in many cases to expect either to reduce the enlargement altogether, or to prevent its augmentation, and in all cases where the patient's health has not been irreparably injured, he has found it practicable to palliate the symptoms.

He now proceeds, therefore, to explain the treatment which he has been led to adopt in cases of diseased ovary.

When the enlargement does not exceed the size of an infant's head, occasioning no pain upon pressure, and being unaccompanied with any derangement of the general health, the advice which he gives is, to take a six or eight

weeks' course of Harrowgate water, to use the warm bath every second day, and to have the abdomen firmly compressed by a suitable roller. Several individuals can be appealed to as having received so much benefit from those means, that the enlargement has never increased, and has never occasioned any inconvenience.

In cases of a similar enlargement, where acute pain and symptomatic fever arise, he premises blood letting by means of the lancet, after which he directs the continued application of a cataplasm, composed of one part of the powdered leaves of the *Conium maculatum*, and two or three parts of lintseed meal, with brisk purgatives and antimonial diaphoretics.

A similar treatment, modified according to circumstances, he has found useful in those cases of the same degree of enlargement where there is a deep seated pain, aggravated by pressure, with symptoms of deranged health, but without excitement of the arterial system. In

such cases, he holds the subtraction of blood to be unnecessary.

When the enlargement exceeds the dimensions of the head of an adult, if no fluctuation can be perceived, he concludes that it is either a parabysma or a collection of hydatids, and for the purpose of preventing the increase, he recommends the internal use of the *Conium maculatum*, beginning with four grains of the powdered leaves, combined with a few grains of the powdered root of *Columbo* three times a-day, increasing the dose as the stomach can bear it, and the fomentation of the abdomen for an hour evening and morning, with a strong decoction of *Groundsel*, the *Senicio vulgaris*.

About the beginning of last century, this plant was held in high estimation by the most intelligent part of the profession, as furnishing a most powerful means for checking the growth both of tubercles and parabysmata. By what caprice it has fallen into dissuetude it is unnecessary to inquire. But the author can, from

not a little experience, now assert, that it has a powerful influence both upon the nervous and the vascular system. He is aware that if he were to state the fact, that in many parts of Ireland and the west of Scotland, this herb is extensively employed as an external application by the poor, many practitioners might disregard such an evidence of its efficacy, but he must confess that it was this consideration which induced him to make trial of the drug.

Fomentations of Groundsel are made by slowly boiling two of the ordinary sized plants, previously well washed, in three quarts of water for one hour. The liquor is then to be strained off. The plants to be selected are those which have not yet been in full flower.

But when fluctuation can be distinctly perceived in a circumscribed tumour, even although it be considerably larger than the head of an adult, if there be no inequality of surface, and no pain upon pressure, the appropriate treatment is, firm compression of the abdo-

men—regular exercise in the open air when the weather permits—percussion for half an hour evening and morning by means of the fingers, or of an instrument contrived for the purpose*—the daily use of the warm bath, and a continued course for many months of a solution of the Muriate of lime, together with such regulation of the diet, and such attention to the state of the bowels as are calculated to promote the general health.

During bad weather, when the patient cannot safely take her usual exercise, the author has recommended, he thinks with great advantage, spinning on the ordinary sized spinning-wheel for two or three hours daily.

With respect to the bath, the heat of the water should be 98° of Fahrenheit's scale, and

* To be had of Stevenson, cutler, opposite the Royal Infirmary of Edinburgh.—This instrument consists of five balls imitating the points of the fingers, and enables the attendant to percuss the affected part without fatigue.

the patient should remain in it from ten minutes to a quarter of an hour.

That the Muriate of lime may not injure the digestive functions, a small proportion of the tincture of Columbo should be added. The formula recommended by the author, is one part of the tincture of Columbo to seven parts of the solution of the Muriate of lime, and of this the patient is directed to take a drachm properly diluted twice a-day.

In the more advanced degrees of the disease, where, along with distinct fluctuation, the bulk is so enormous as to make injurious pressure upon the respiratory or digestive organs, the operation of tapping becomes an expedient of necessity. But there are also cases where this operation may be employed as a means of retarding the progress of the disease. It requires, however, much practical judgment to discriminate such cases, and the author's experience enables him to suggest the following precautions upon the subject.

Firstly, If the symptoms of the case are so equivocal, that it is doubtful whether they arise from ascites or ovarian dropsy, tapping is justifiable, for it not only must tend to relieve the symptoms, but also to determine the true nature of the disease.

Secondly, When the age of the patient is above sixty, tapping should never be had recourse to as an operation of choice, because many individuals, according to the author's experience, have attained the age of from seventy-five to eighty without much inconvenience, notwithstanding the enlargement equaling the size of the gravid uterus at the full period of utero gestation.

Thirdly, But when the age of the patient is between twenty and forty-five or fifty, tapping holds out the chance of allowing the resources of the constitution, assisted by medical treatment, to remove the complaint.

Several cases have fallen under the notice of

the author, which entitle him to give this opinion; but certainly the most remarkable is that of a lady, who had been considered by two of the most eminent general practitioners in this city (both now dead) to be labouring under ascites. After tapping, it was ascertained that the disease was dropsy of the ovarium. Within eight or nine months, it became again necessary to have recourse to the operation. Thirteen years have now elapsed since that time, and the lady continues in perfect health, without the slightest enlargement.

In this case, the treatment recommended, after the second operation, was a continued course of the Muriate of lime, with a combination of the muriated tincture of iron, with firm compression of the abdomen, regular exercise on horseback when the weather permits, and spinning for two or three hours on the days on which she was confined within doors from the state of the weather.

Fourthly, If along with fluctuation there be

evident hardness in any part of the circumscribed tumour, the operation of tapping is unsafe, and indeed may be most prejudicial.

One of the most remarkable cases, in illustration of this, which has fallen under the notice of the author, occurred within these few years. A most meritorious individual, unmarried, about the sixtieth year of her age, became conscious that she could not make the usual exertions in the management of her family, in consequence of an enlargement of the abdomen; but until she had great difficulty in stooping, she did not apply for medical advice.

When the author saw her, along with her attending surgeon, he perceived a very distinct fluctuation, and as the patient's general health was good, his impression was, that by the removal of the fluid, the present inconvenience might be remedied, and the further progress of the disease be retarded.

Some days elapsed after this opinion before

the patient made up her mind to submit to the operation. When she was put in a proper posture for that purpose, the author was a good deal staggered on perceiving a resisting hardness underneath the anterior part of the parities of the abdomen, and on feeling the fluctuation at the sides to be rather obscure. He therefore hesitated much respecting the propriety of the operation, and he expressed his doubts very candidly to the operator.

Notwithstanding this, the operation was proceeded with, but no more than an English pint of fluid was discharged. A probe was introduced, on the supposition that there might be some fatty follicle stopping up the canula of the trocar; but as this did not produce any additional flow of fluid, the author took the liberty to assist the operator, and to his surprise, he found the point of the canula firmly impacted in a resisting substance. The instrument was immediately withdrawn, and in the course of twenty-four hours, two or three English pints of serous fluid were discharged from the wound.

This patient did not survive many months. The appearances on dissection explained the case. There was a fibrous parabysma of the ovarium, and at the same time, a serous effusion into the cavity of the abdomen.

At one period of the author's professional life, he had a notion that the progress of ovarian dropsy, when uncomplicated with organic disease, might be treated like the hydrocele of the male, that is, by injecting some stimulant liquor into the cavity of the sac after the operation of tapping. In the year 1796, this experiment was tried on a poor woman residing in the street leading to the Castle, by one of his most zealous and intelligent annual pupils, the late Dr Sharp of Cork. The experiment proved unsuccessful. The alarming symptoms produced by the local inflammation thus excited, resisted the most active and anxious treatment, and proved fatal within the week.

Another experiment for the cure of this

disease occurred to the author. Finding that the accumulation of fluid was augmented, and its secretion accelerated according to the number of times the patient was tapped, of which there are some most remarkable cases upon record,* his project was to deviate from the ordinary practice, and to have recourse to tapping before the sac should attain its former size, so as to favour the gradual diminution of the secreting surface. But a case which occurred about twenty years ago led him at once to relinquish this speculation.

The lady was in the fifty-second year of her age, and her general health was unimpaired. She had been many years married without having had a family. Having come to Edinburgh on a visit, and having accidentally mentioned to one of her relations, that she had had for some time an enlargement of the abdomen, she was persuaded to consult an eminent gene-

* See London Medical Communications, vol. ii., page 124.

ral practitioner. He sent for a surgeon, who pronounced the case to be incysted dropsy, and, influenced by their united opinion, this lady submitted to the operation of tapping. She did not survive a week. The author, though attending at the time one of her nearest relations, could not learn the symptoms which preceded her death. But he had occasion to know, that on the day previous to the operation, this lady had visited, without inconvenience, an old domestic of the family, whose residence was five floors up one of the ancient edifices of the Old Town of this city.

Another case occurred within these few years which has confirmed the author in his opinion, that the operation of tapping is not safe till the sac has acquired a certain degree of distension. When he was called to this patient, who was in the forty-second year of her age, and the mother of one child, he learned, that for many months she had been harrassed with almost incessant cough, and that gradually a great enlargement of the abdomen had taken

place, in so much that, for some weeks, every exertion in moving had been accompanied with breathlessness. He found a very distinct fluctuation, and recommended immediate recourse to tapping. About twelve English pints of ropy fluid were drawn off, and the patient's health was quickly renovated.

Four or five months after this, however, the swelling of the abdomen having returned, with distinct fluctuation, the lady insisted on being again tapped, in consequence of the great relief which she had formerly experienced, and to this her medical attendants consented with some hesitation.

After this patient was placed in the proper position for the operation, the author took the operator aside, and expressed his doubts of the safety of the operation, founded upon the inconsiderable increase of size relatively to what it had formerly been. The anxious desire of the patient herself, however, induced him to proceed. But the moment the trocar was in-

roduced, she screamed out that she had excruciating pain. Not more than half the quantity formerly drawn off was discharged. The pain increased, accompanied by incessant vomiting and ardent fever, and all the ordinary symptoms of peritonitis, and notwithstanding the most active measures, no alleviation of symptoms took place, and the patient sunk within six or seven days. To the surprise of the medical attendants, it was found, after death, that the inflammation had been confined exclusively to the internal surface of the sac, and that the peritonæum was perfectly sound.

In America, and some other parts of the world, it has been alleged that, in the early stages of enlarged ovary, extirpation by means of a surgical operation has been safely and successfully practised. But against this expedient, the author has been always accustomed to urge the following objections.

Firstly, It is extremely difficult, as has been

already shewn, to distinguish enlargement of the ovary in its early stages ; and it is still more difficult to foretel the progress of such enlargement. Any operation might, therefore, be useless or unnecessary,—useless if there be no disease, and unnecessary if the disease be in a stationary condition.

Secondly, There is always a risk, in cases of enlarged ovary, that there be a complication of organic disease, or that morbid adhesions may have formed, connecting the disease with other parts.

Thirdly, As no prudent practitioner would think of operating unless the patient's health suffered, or seemed to suffer, from the disease, there must, in every such case, be the hazard of some malignant affection existing which no operation could remedy.

To his great surprise, an old pupil, Mr Lizars, the Professor of Surgery of the Edinburgh Royal College of Surgeons, has enabled him to esta-

blish the validity of those objections upon grounds which are incontrovertible, and he considers that the public, as well as the profession, are under great obligations to the Professor for having done so. Since the operation has proved unsuccessful under his dexterous hands, it is to be presumed that no British surgeon in future will venture upon such an experiment.

According to Professor Lizars's printed account, he undertook the excision of the ovary in four cases, and the results are thus described by himself.

1. "Wednesday, 24th October 1823, was the day appointed for the operation," &c. He commenced the operation "by making a longitudinal incision, parallel with, and on the left side of the linea alba, about two inches from the ensiform cartilage to the crista of the os pubis, through the skin and cellular substance, when the peritonæum appeared, the recti muscles being separated by the distension con-

sequent on the present disease and former pregnancy." Having then "made a small incision through the peritonæum, he made "the internal to correspond with the external incision," and then proceeded to examine the state of the tumour, "*when, to his astonishment, he could find none,*"—page 7, line 36.*

No operation could more unequivocally establish his first objection to the excision of the ovary.

2. Professor Lizars's second operation was performed on Sunday, 27th February 1825. He cut down from the ensiform cartilage to

* Since Professor Lizars has stated, that, before having recourse to the operation, he "deemed it his duty to have the opinion of the principal practitioners of this city," that "it was agreed by all that there was a disease of one or both ovaries," and that the patient "had been twice tapped for dropsy of the left ovary, the result of a former consultation of some of the ablest medical men of this city," it is incumbent upon the author to declare publicly that, according to his sincere belief, he never saw this patient.

the symphysis pubis. He found one ovary "occupying the greater portion of the abdomen," and resembling "the uterus in the eighth or ninth month of gestation." He tied a ligature round its pedicle, and then cut it out. He now found that the other ovary was increased to "nearly the fourth part of the one removed, and was adhering on the right side of the parietes of the pelvis, and to the uterus, but comparatively free on the left side." While examining this, the gentlemen around him begged him to desist, in which he concurred, "conceiving that, as the uterus was elevated above the brim of the pelvis, and the ovary not tied down by adhesions to the bottom of the pelvis, there might be hopes of its rising after the other had been detached, and that it might be extirpated afterwards." The Professor's account of this case terminates on the 9th May, being ten weeks after the operation, and the conclusion of his report is in these words:—"She is now able again to get out of bed and take nourishing diet. The ligature still remains, in consequence, I imagine, of having transfixed

the pedicle ; it excites a little purulent discharge."

3. His third operation was performed upon the 22d March 1825, and it so strongly corroborates the author's second objection to the operation, that he feels it his duty to give Professor Lizars's account somewhat in detail. " I commenced the operation by making an incision through the skin and adipose substance, from the sternum to the symphysis pubis, then through the muscles and peritonæum, near the sternum, so as to get at once into the abdominal cavity ; but the tumour approached so near the sternum that I could not accomplish this, so that I cut through the tendons of the external oblique, internal oblique, and rectus muscles, imagining I had got to the surface of the tumour, and was proceeding to separate the parietes from the tumour, when I observed my mistake. I accordingly deepened the incision through the posterior tendinous layer of the internal oblique and transversalis muscles, and arrived at the sac of the tumour ; I then began

to insulate the tumour, which was found adhering so strongly to the parietes of the abdomen, to the colon, and to the brim of the pelvis, that I despaired of being able to detach it; however, by dissecting at one time, and tearing cautiously with the fingers at another, I succeeded in insulating a large mass of a dark brown colour, weighing upwards of seven pounds, and to my delight, having a pedicle only the thickness of the little finger, and between one and two inches in length. I now gave this enormous mass to my assistant, Mr Macrae, passed a ligature round the pedicle, and tied it firmly, and then cut close to the tumour, securing three open mouthed vessels of the pedicle."

This poor woman's sufferings from the time of the operation appear, from Professor Lizars's account, to have been very severe, and continued fifty-three hours, when she sunk.

4. The fourth operation performed by Professor Lizars, although it terminated favourably,

in so far as the life of the poor woman was concerned, furnished an additional and conclusive illustration of the author's objection against this operation, and the circumstances merit the attention of all young practitioners. The Professor's account of the operation is briefly the following.

“ A longitudinal incision was made through the integuments from the sternum to the pubes ; at the sternal extremity the peritonæum was wounded, and one finger of the left hand was here introduced, then another, and the peritonæum laid open to the pubes ; the same was done upwards to the sternum, where a multiplicity of convoluted vessels presented themselves of various magnitude, from the thickness of a finger to that of a crow's quill. At first I thought them the intestines, for they appeared extremely fleshy ; then I imagined them the blood vessels of a placenta, which they still more resembled ; indeed, such was their resemblance to the vessels of that organ, that the same idea struck one and all of the gentle-

men present. On minute examination, however, they were found to be the blood vessels of the omentum majus, enormously enlarged, running on the surface and into the substance of the tumour, which appeared an enlarged ovarium. Finding that it was impracticable either to dissect these vessels from the surface of the tumour, or to secure them, in consequence of their great number, I abandoned the idea of extirpating the mass, in which decision I was supported by the gentlemen present. I therefore punctured with a large trocar and canula the centre of the tumour, but nothing flowed. I next made a small but deep incision with a scalpel, when the tumour appeared solid and cartilaginous, and a vessel bled a little. I lastly punctured the lower part of the tumour, being anxious to reduce its bulk, but only pure blood flowed."

The history of this case is extended only to a fortnight after the operation, at which time, the following is the report :—" The cough and irritation of the bladder have subsided ; she

sleeps soundly, is free of pain, eats heartily, sits up for an hour in the day in bed, and has motion in her bowels without the œnema. She is allowed ordinary fare ; the wound healing rapidly."

It was at one time imagined by the author, that in cases where the sac containing the fluid proves to be equable, it might be justifiable to draw it out and tie it, and he certainly, for several years, was anxious to have an opportunity of making the experiment, but in this wish he was disappointed, for in the only cases where the experiment could have been warranted, the general health of the patients was so good, as to hold out the expectation of their recovering from their disease, or at least of their life being protracted for many years by the natural resources of their constitution.

The cases to which he alludes, were cases where there had been a large accumulation of fluid, and where, on the day after tapping, the collapsed sac from which the fluid had been

drawn off, resembled in size the uterus on the day after lying-in at the full time, and upon pressure was felt to be neither painful nor unequal on its surface.

From the event of the two cases already recorded, pages 116 and 117, he is now convinced that there would be much hazard from the operation he had projected, and he has no difficulty in avowing this retraction of his former opinion.

Three remedies for this disease, not hitherto adverted to, ought perhaps to be noticed, in order to prevent their being again adopted by the junior part of the profession.

The first of these, recommended by the celebrated anatomist and surgeon, Sheldon, was, keeping up a constant discharge from the surface of the abdomen by means of blistering over the enlargement, and dressing with savine ointment. In a very few cases this practice seemed successful, but the best proof of its inefficacy is, that the practice was not continued after Mr

Sheldon's death. The probability is, that in the cases where it seemed useful, the efforts of nature had arrested the progress of the disease.

For the relief of the parabysma of the ovarium, the second practice was suggested, viz., passing a seton through the tumour. No consideration could ever have induced the author to sanction such a practice, and therefore he cannot give the result of his own experience on the subject. But he has had some communications from practitioners of high respectability, detailing the effect of this experiment, which strongly confirm those objections to the practice which every principle of common sense must suggest.

He deems it his duty, for the purpose of deterring speculative surgeons from adopting such a practice, to record the last case of this kind which has been reported to him.

An unmarried lady, about the fiftieth year of her age, residing in a country town, had had for

some time a circumscribed indurated enlargement, about the size of the head of an adult, within the abdomen. Her general health was good, and she confessed that she suffered little annoyance from the enlargement. Having accidentally heard that a celebrated operative surgeon had been called to the neighbourhood, she requested his opinion on her case. He punctured the enlargement, but as no fluid issued, he passed a seton through the tumour. The patient died within the week, and as she was a most influential person in her native place, the lamentations for her untimely end can be better imagined than described.

Dr Jenner, the celebrated discoverer of vaccination, imagined, in the latter years of his life, that the enlargement of the ovary, particularly when arising from hydatids, might be cured by keeping up for a succession of days or weeks a constant state of nausea, and he apparently founded his opinion upon the result of one or two cases, where individuals in whom he supposed there was an enlarged ovary, had been cured

apparently by the continued sickness incidental to a protracted sea voyage.

Two objections occur against this speculation of Dr Jenner; for, in the first place, if there be no fluctuation, it is impossible to decide whether the disease be a fibrous parabsysma, or a collection of hydatids; and, secondly, in some of the cases which the author has attended, where the patients were pregnant notwithstanding the diseased ovary, the breeding sickness (which so strongly resembles sea sickness) seemed to have no influence whatever upon the disease.

EVIDENCES OR SIGNS OF HUMAN
PREGNANCY.

“ In ordinary life, the existence of pregnancy is readily known and observed. The cases in which females have made mistakes on this point are few ; and those few, from the fear of ridicule, are studiously concealed. We are hence led to form an opinion that nothing can be more readily known than this. But the case is altered when a medical witness is called upon to prove its existence on oath. He is then bound to weigh all the *possible causes* that may produce these various symptoms, and he is to recollect that all of them have occasionally proved equivocal. *There is no one invariable sign of pregnancy*, and it is probably well that there is not.”—Beck’s Elements of Medical Jurisprudence, second edition, by Mr Dunlop, page 81.

While the author admits that the observations above quoted correspond with the general belief of the profession, respecting the signs of pregnancy during the first four or five months of conception, he enters his protest against its application to those of the latter months, being convinced that there are unequivocal marks which enable the practitioner to decide the nature of the case at that period. But besides, he considers himself entitled to allege, that the obscurity in which the symptoms of early pregnancy have been involved, has arisen chiefly from practical men not having investigated the subject with sufficient accuracy.

He undertakes therefore to prove, that both in the early and in the latter months of pregnancy, there are invariable signs marking that condition of the system.

I.—Signs during the early months of pregnancy.

When the author began practice, it was the

popular belief that the movements of the infant were not perceived by the parent till the completion of four months and a half after conception, and hence the distinction into the early and latter months was strictly accurate, each comprehending the same portion of time. More than forty years have elapsed since he ascertained that, in general, quickening, as it is called, that is, the first sensation by the parent of the motion of the infant, takes place at the completion of four calendar months after conception. The knowledge of this fact is evidently of great importance in actual practice, but in a discussion on the signs of pregnancy, the popular opinion may be with advantage adopted.

Under this explanation, the author has no hesitation in asserting, that there are two circumstances which invariably attend pregnancy during the early months, viz. :—Suppression of the catamenia, and a perceptible change on the surface of the mammæ surrounding the nipple, and that all other symptoms are liable

to so much variation in different individuals, and even in the same individual in different pregnancies, that they ought to be disregarded.

The invariable suppression of the catamenia has been utterly denied by many practitioners of the highest respectability, and it would not be difficult to collect a cloud of witnesses who state their positive knowledge of exceptions to this general law. Thus, Dr Gooch, who so deservedly acquired great professional eminence, says, p. 202,—

“ Many women assert that they have menstruated regularly during the early months of pregnancy ; whether this is really menstruation, or a periodical hæmorrhage from partial separation of the ovum, is not the question, but whether, during the first months of pregnancy, there may not occur a monthly discharge of blood, which in period and duration so far resembles menstruation, that the patient is unable to distinguish it ; and about this there can be no doubt.”

By these remarks, there is a degree of credit given to popular prejudice to which it is by no means entitled, for the practitioner is not to be influenced by the suppositions of the patient, but to ascertain, by minute inquiry, the precise nature of the case, and where irregular discharges happen during the early months of pregnancy, the fallacy of the patient's opinion of the circumstances, if carefully investigated, can in general be detected.

That in some individuals a flow of blood is directed to the uterine arteries during the first months of pregnancy exactly at the regular periods of menstruation, indicated by a bloody discharge per vaginam, has been often alleged, but it does not consist with the experience of the author, that there ever was, strictly speaking, such an occurrence. He has known a slight discharge in individuals of a relaxed habit about the usual period of menstruation, but he has invariably found marked discrepancies, distinguishing such appearances from the natural periodical discharge. Thus, there has

been an irregularity in the date of the recurrence, (though perhaps to the extent only of a day or two,) the duration and the quantity of the discharge have been very different, there having been only a slight show for an hour or two in persons habitually subject to a copious flow of five or six days duration, or there have been feelings preceding or accompanying the temporary appearance never before experienced.

It is not wonderful, that when the nature of menstruation, and the changes on the uterus consequent on impregnation, were little understood, irregular discharges during pregnancy were supposed to be really returns of menstruation, but it certainly might have been presumed, that in the present state of knowledge respecting the œconomy of the uterine system, more correct notions should have been now entertained.

That the menstrual discharge proceeds from the internal surface of the uterus through the os uteri, and that from a short time after im-

pregnation, the membrana decidua lines the uterus, and that the cervix and os uteri are closely sealed up, are facts acknowledged by all modern anatomists and physiologists. The doubt, therefore, started by Dr Gooch, relates to the facility or difficulty of distinguishing, in any given case, irregular discharges from the menstrual fluid. But, in the author's opinion, there are three circumstances which enable the practitioner to make this important distinction, viz., the period of recurrence, the duration, and the quality of the discharge ; and therefore, in all doubtful cases, accurate information on those points ought to be obtained.

But while suppression of the catamenia invariably attends pregnancy, it is well known that it may take place independent of conception, for many circumstances may interrupt the course of that natural evacuation. When, however, suppression of the catamenia is followed by the change in the mammæ to be now described, there can be no doubt on the nature of the case.

Many practitioners of established character, and many writers on medical jurisprudence, have alleged, that no dependence can be placed upon the change in the colour of the skin of the mammæ surrounding the nipple, technically called the *Areola*, and it is not difficult to account for this scepticism, because the change alluded to is chiefly remarkable in a first pregnancy, and because it requires considerable practical acumen to distinguish it. Accordingly, Dr Beck (page 76), calls it a “fallacious proof;” and Dr Gooch has stated, that “in very fair women, with light hair and eyes, the discolouration of the areola is often so slight, that it is difficult to perceive; and in brunettes, who have already borne children, the areola remains dark ever afterwards, so that this ceases to be a guide in all subsequent pregnancies.” But these remarks of Dr Gooch are not founded upon accurate observation.

In fair women, previous to impregnation, there is no perceptible discolouration round the nipple excepting during menstruation,

when a slightly marked circle of a blueish hue like milk and water, of various breadth in different individuals, commonly appears. When such women become pregnant, this circle is again apparent towards the end of the third month, and it gradually grows darker, so that after the fifth month, it is of a brownish tint.

But in women whose complexion is dark, the nipple in the unimpregnated state is surrounded by a brownish circle, which, after the third month of pregnancy gradually becomes darker, so as to resemble old mahogany.

Swarthy women, on the other hand, have naturally, in the virgin state, a mahogany coloured areola, which, in the progress of pregnancy, is gradually converted into a black purple.

These are the cognizable changes upon the surface of the mammæ in consequence of impregnation in individuals who have a marked characteristic complexion; but as there is every

shade of complexion in women of every rank, so there is a correspondent shade in the appearance of the areola. An additional difficulty in recognising this mark in actual practice is, that after a woman has once had a child, whatever her complexion may be, a discoloured circle surrounds the nipple. Thus, Dr Gooch says,—“ In brunettes who have already borne children, the areola remains dark ever afterwards.” But Dr Gooch has expressed himself inaccurately upon this subject, for in persons of that complexion the areola, after delivery, becomes, relatively to what it had been during the latter months, brown, and not dark.

From the above description of the appearances on the surface of the *mammæ* surrounding the nipple, it is evident that, in brunettes, there may be, independent of pregnancy, as strongly marked an areola, in so far as colour is concerned, as in fair women during the latter months of pregnancy ; and that in swarthy individuals there may be, in the virgin state, as dark an areola as in pregnant brunettes.

There may also be a still further difficulty in the estimation of this mark, arising from the state of the mammæ during menstruation in women who have a very fair complexion. As to the areola being formed in many of the complaints which resemble pregnancy, as Dr Denman at one time alleged, it is unnecessary to make any other remark than that it is quite inconsistent with the observation of every modern practitioner.

Such being the varieties in the appearance of the mammæ in different individuals, the little confidence placed in them, as affording evidences of impregnation, by those who have not investigated the subject, can be readily understood. Accordingly, in the latest British publication on the Evidences of Pregnancy, the author, Dr Evory Kennedy, says, page 52,—“ With regard to the areola, the conclusion we must arrive at is, that although it is not unworthy of our attention, taken with other symptoms, particularly in first pregnancy, yet, from the frequency of its occurrence in cases

where pregnancy did not exist, and its absence where it did, without strong corroborating proofs, at least, we can place little confidence in it."

The decided conviction of the author, however, is, that the areola connected with pregnancy can always be distinguished by an experienced eye. In the early years of his professional life, he trusted chiefly to the breadth of the discoloured ring, increasing as pregnancy advanced; and he still believes that, as a general rule, this holds good, though he has seen a few remarkable exceptions. The first of these occurred about ten years ago. The patient, whose complexion was neither fair nor that of a brunette, after having been some years married without any family, had been obstructed for some months, when the author was requested to give an opinion upon her case. He saw no discolouration of the *mammæ*, but he at once ascertained, not only the increased bulk of the uterus, but the unequivocal movement of the infant. On again

examining the mammæ, he discovered a narrow brown ring, not exceeding the eighth of an inch in breadth, surrounding the nipple. The lady went to the full time, and produced a healthy child, but the areola never exceeded a quarter of an inch in breadth. He has since that time seen two or more similar cases.

For many years, the mark on which he has placed his principal reliance for distinguishing the true areola consequent upon impregnation, from the appearance of the surface of the mamma peculiar to the individual in the unimpregnated state, is a certain degree of turgescence on the surface of the discoloured ring, which becomes more and more distinct towards the latter end of pregnancy. In women who have had a family, and in whom there is a brown or dark areola while not pregnant, there is no sensible turgescence of the surface ; but during pregnancy, the turgescence alluded to is, in most cases, evident to the naked eye, and, according to the author's experience, can in all cases be

detected by a magnifying glass. The elevation of its outer surface can be thus seen distinctly. During menstruation, indeed, there is a certain degree of turgescence, but it proves of temporary duration only, and when the conception becomes blighted in the early months, the turgescence gradually disappears.

From the above remarks, the author again states, that the chief cognizable sign of pregnancy, during the early months, is the appearance of the surface of the mamma surrounding the nipple; and he considers it a matter of great practical importance to establish this fact. In the course of practice, many cases occur where the medical attendant, from respect to the feelings of the patient, dare not even hint at any of the symptoms of pregnancy, and, consequently, cannot propose any examination of the state of the abdomen; but the appearance of the mamma can be ascertained without exciting suspicion or giving offence.

II.—Signs of pregnancy during the latter months.

During the latter months, as the signs of pregnancy are cognizable to the senses, it is wonderful that they should be considered doubtful; and yet not only writers on medical jurisprudence, but also practitioners of midwifery of established character, have asserted that they are so. In the author's opinion, the difficulties and doubts upon this subject can be readily cleared up.

The chief evidences of pregnancy in the latter months, generally noticed, are progressive increase of enlargement of the belly—distinct sensation of the occasional movements of the infant—and secretion of milk in the mammæ; of these the first and last are fallacious, for few women ever supposed themselves pregnant, in whom both circumstances did not concur. But the movements of the infant being independent of the control of the patient, can always be distinguished by an attentive practitioner, and

in proportion as pregnancy advances, the facility of this detection increases.

Those who have read the case of Johanna Southcott, and other individuals, who, although labouring under visceral diseases of the abdomen, were pronounced to be with quick child by respectable practitioners, may question the correctness of this remark.

It seems probable, that the mistakes of this description have arisen, principally from inattention to the fact, that different sensations are communicated by the movements of the infant at different periods of pregnancy. Thus, for the first month after quickening, if the hand be applied over the region of the uterus, the movement of the infant feels like that of a ball suddenly rebounding from the part on which it is thrown, but after another month, when the infant moves, a bulky body can be perceived as if starting, and during the last two months, besides the starting, the infant can be felt to move occasionally its several limbs.

Now, it consists with the experience of the author, that in some individuals, the irritability of the abdominal muscles is such, that if pressed upon by the points of the fingers, some of their fibres are forced into momentary and involuntary contraction, and communicate very much the same sensation as the rebounding of the infant, during the first month after quickening. This cause of deception may be discovered, by applying the palm of the hand, instead of the points of the fingers to the surface of the belly, and a young practitioner should always recollect, that there can be no certainty of pregnancy, if what is supposed to be the movement of the infant, do not correspond with that which should take place at the alleged period of utero gestation. For example, if a woman supposes herself to be seven months pregnant, and declares that the movements of the infant resemble a strong pulsation or the fluttering of a bird, there is a strong presumption that she has mistaken her condition, for at that period the movements of the infant communicate a very different sensation.

Cases, the author is well aware, are recorded, upon apparently good authority too, where it was supposed, that although pregnancy proceeded safely to the full period, the movements of the infant, though alive, had never been perceived by the parent, and could not be detected by the practitioner. Dr Gooch expressly says, page 203, "There are cases, though rare, in which it (meaning the foetus) has not moved during the whole of pregnancy, although it has been born alive and vigorous; of this I have known one case and read of others." It is to be remarked, however, that Dr Gooch does not say that in that instance he made any attempts to excite the movements of the infant. The author holds all those alleged cases to be the offspring of prejudice and credulity.

Perhaps, however, this erroneous opinion may have arisen in some measure from the fact, that where women are anxious to conceal their real state, they may, previous to the completion of the seventh month, so force into action the abdominal muscles, that the hand of the

practitioner cannot be brought in contact with the uterus, and far less with its contents. Such is the dexterity of some individuals in these efforts, that they cannot be thrown off their guard, even by the unexpected application of the hand, previously soaked in cold water. But after the completion of the seventh month, the infant, if alive, can, by pressure, or by the application of cold, be made to move, notwithstanding the efforts of the parent.

The observations of Dr Beck, and of Dr Gooch, on the uncertainty of the marks of pregnancy, apply to those cases where, after conception, the *fœtus*, though blighted, is retained in utero. Under such circumstances, the suppression of the catamenia, and the breeding symptoms in the early months, convince the patient that she had conceived, and the discrepancies which follow the death of the embryo are overlooked or misrepresented, but the absence of progressive increase of size is always either avowed or obvious. The duty of the practitioner in such cases, is to ascertain

whether the turgescence of the areola has subsided, whether the bulk of the uterus corresponds with the duration of obstruction, and whether there be any perceptible movement of the infant.

Complications of pregnancy, with various diseases, are occasionally met with, and require particular attention. The general rule should be, that wherever any disease during the ordinary course of menstrual life is attended with suppression of the catamenia, the state both of the mammæ and the uterus should be carefully examined, and no regard whatever should be paid to the prejudices of the patient or attendants. During the two last months, an examination per vaginam, supposing the infant alive, can enable the practitioner to detect pregnancy, with whatever disease it may be complicated.

On the various visceral diseases, and other affections which may be mistaken for pregnancy, the author deems it unnecessary to

offer any remarks. He can refer with confidence to Dr Gooch's observations, page 216, *et seq.* He trusts that he has satisfactorily proved, that the state of the mammæ in the early months, and the movements of the infant in the latter months, afford unequivocal evidence of pregnancy.

Within these few years, a new test, professing to remove all doubts respecting pregnancy, has been published, what is called *Auscultation*, and the author feels it incumbent on him to express his sentiments upon this subject.

Firstly, He admits, that he has had no opportunity of verifying the allegations of Dr Kergaradec, and others who have practised *Auscultation*, for the plain reason, that he has not met with a case during the last thirty years where he could not ascertain pregnancy after the fifth month (where the infant continued to live), by the marks suggested in the preceding observations. Perhaps it may be urged, that as a mere matter of curiosity, he ought to

have investigated this point, and certainly, if he had had leisure for the gratification of curiosity, he should have done so.

Secondly, Throughout his professional life, the author has never adopted new modes of practice, where the established ones were found by experience to be successful.

Thirdly, In the better ranks, no prudent practitioner would have recourse to means calculated to excite alarm in the patient, and surely the ceremony of applying the stethoscope must be very formidable to susceptible females.

Fourthly, From the account of Dr Every Kennedy and others, it requires a certain experienced tact to distinguish the two characteristics of pregnancy, which it is alleged Auscultation discovers, viz., the *souffle* of the placenta, and the action of the foetal heart.

Fifthly, There is such a discrepancy be-

tween the experience of those who have applied the stethoscope to ascertain the state of the gravid uterus, and that of the author, respecting the action of the heart of the foetus in utero, that he cannot divest himself of the impression that there is some fallacy upon that point.

Almost half a century has elapsed since he remarked, that in infants who did not breathe upon birth, but in whom the pulsation in the chord continued, the action of the heart did not exceed sixty pulsations in the minute till breathing took place, when it became so frequent, that it could not be numbered. This led him to take every opportunity (when he had occasion to introduce his hand into the uterus to extract the infant) to endeavour to ascertain the action of the foetal heart before birth, and he has in no instance ever discovered it to be more frequent than in the still born infant whose cord beats. This fact he has been long in the custom of stating in his lectures, and it has been confirmed with-

in these fifteen years incidentally by several foreign authors.

Now, it is certainly possible in the cases which have fallen under his observation, that the actions of the foetal heart had been different from what they usually are, but it is not probable that he could have repeated his conviction of this slow action, year after year, as consistent with his experience, unless he had found it to be true.

Since the publication of Dr Every Kennedy's book, the author's attention has been still more particularly directed to this subject, and as far as his own observations warrant, his opinion has been confirmed. In one case the patient, when between five and six months pregnant, suddenly felt, in the act of having relief in her bowels, the liquor amnii discharged, and the umbilical cord of the infant forced down. For many hours no uterine contractions followed, but the pulsation in the cord continued, and the occasional movement of the infant was dis-

tinctly perceived on applying the hand to the abdomen. The author carefully counted the pulsations in the cord innumerable times, and they never exceeded sixty in the minute.

A lady at the full period of pregnancy, awakened from her sleep in consequence of a sharp pain, followed by the discharge of water, and the protrusion of the cord. Two hours elapsed before uterine contractions took place, and during that time the author had many opportunities of ascertaining that the pulsations in the chord did not exceed sixty. Within a month after that date, he was called to a similar case, where three hours intervened between the protrusion of the umbilical cord and the accession of uterine contractions, and during all that time the number of pulsations was the same as in the two former cases.

A very short time after this, a case occurred where, previous to the rupture of the membranes, it was ascertained that the navel-string preceded the presenting part. Its pulsations

were repeatedly reckoned, and they did not exceed sixty in the minute. As the liquor amnii was in considerable quantity, and as the pulsations of the cord were reckoned during the intervals of the pains, the pressure of the uterus upon the infant could have no influence.

At the author's request, his friend and old pupil, Dr Sidey, has, for a twelvemonth past, paid particular attention to the action of the heart of the infant, where breathing did not take place upon birth, but where it was eventually established and the infant recovered. His report is, that in eight cases of that description, the action of the heart, previous to any effort of breathing, was from 56 to 60 pulsations in the minute.

Notwithstanding the conviction which the author's experience has involuntarily forced upon him, that there must be some fallacy in the observations of those who have supposed that the stethoscope can detect the pulsations of the foetal heart, he was anxious to have Dr

Kennedy's experiments repeated ; and he requested his friend, Dr John Moir, on whose intelligence and veracity he can place the most implicit reliance, to conduct those experiments. Dr Moir's report is in substance the following.*

In ten cases in the Edinburgh General Lying-In Hospital, during the months of August and September 1833, where the patients were above seven months pregnant, he distinctly perceived the *bruit de souffle* synchronous with the woman's pulse, and also a pulsation which he considered to be that of the foetal heart, and which varied from 120 to 144 in the minute. In one case, when making the examination, the infant moved violently, and the pulsations were accelerated 12 or 14 in the minute.

Dr Moir has, since that time, met with five

* Dr Moir's full Communication is added by way of Appendix.

cases requiring the operation of turning after the liquor amnii had been discharged. In one of those cases (October 27, 1833) an opiate was given previous to undertaking the operation, in consequence of which the uterine contractions were suspended. On applying the stethoscope during the suspension, the pulsations of the foetal heart were found to be 100 in the minute. But when the hand was introduced in order to perform the operation, uterine contractions recurred, and the heart of the infant was felt to beat 70. Again applying the stethoscope, without withdrawing the hand, the pulsations heard through it corresponded exactly with those which were felt in the heart, both being 80. Dr Moir felt that every uterine contraction lessened the action of the foetal heart, but whenever the pains went off, that action was invariably accelerated.

In the second case (6th May 1834), where the placenta was over the os uteri, the stethoscope indicated the number of pulsations of the foetal heart to be from 120 to 130; and

on introducing the hand into the uterus, the pulsations were ascertained to be 124, but on a labour-pain taking place they were reduced to 90. When the pain ceased, the action gradually increased to its former frequency, and on the accession of every pain again lessened. This diminution of frequency was not uniform ; the number at one time, and only once, fell to 80.

The very same results were observed in the next two cases. The urgency of the symptoms requiring instant delivery in the fifth case, prevented the application of the stethoscope.

These facts, testified by Dr John Moir, confirm most satisfactorily Dr Evory Kennedy's opinions on this subject, though they render the author's observations very inexplicable. In the cases of the prolapsus of the cord which he has witnessed since Dr Kennedy's book fell under his notice, there were no uterine contractions for hours, and yet the pulsation in the cord did not exceed 60. In one of the cases, too, the

liquor amnii was not discharged. In the cases where the author has had to perform the operation of turning for the last two years, the symptoms have been too urgent to afford him any leisure to feel accurately the state of the infant's heart while still in the womb.

It results, however, from the facts ascertained by Dr Kergaradec, Dr Evory Kennedy, and Dr John Moir, that after a certain period of pregnancy, the application of the stethoscope furnishes a satisfactory test; but two questions arise on this subject. *First*, What is the earliest period of pregnancy which can be ascertained by the application of the stethoscope? And, *Secondly*, What are the doubtful cases of pregnancy which require such a test?

On the former of those questions, Dr Kennedy says, page 82,—“ We have not succeeded in detecting the placental sound in any case, until after the second month from impregnation, but have frequently done so in the tenth, eleventh and twelfth weeks.” But the Doctor

subsequently mentions a case, where “ he distinctly detected the placental souffle, on the 15th August 1829, and the patient was delivered of a living child on the 8th March 1830.”

Notwithstanding his high respect for the accuracy of observation of Dr Evory Kennedy, the author has some doubts upon this case, founded upon the fact, that, previous to the third month of utero gestation, the structure of the placenta is quite different from what it is after that period. If the souffle perceived in the latter months be occasioned by the peculiar structure of the placenta at that time, it is not probable that it could be discovered before that structure is developed. But if what Dr Kennedy calls the placental souffle, be the sound produced by the peculiar distribution of blood through the gravid uterus, the fact will not only be intelligible but important, as furnishing a diagnostic mark of pregnancy from the second month upwards.

With respect to the second question, viz.,

the cases in which the test of the stethoscope may be employed for detecting pregnancy, it must appear to every practitioner that they must be limited. Except in criminal cases, that is, where a woman condemned to death pleads pregnancy in arrest of judgment, it is seldom necessary to give a decided opinion sooner than the fifth month of pregnancy, after which time the appearance of the areola, the enlargement of the uterus, and the sensation of the motions of the infant, afford sufficient evidence of the nature of the case.

It must be admitted, indeed, that a general prejudice prevails, not only among the public, but among medical men of established character, that diseases occurring during pregnancy ought not to be treated in the ordinary manner. But this opinion has always appeared to the author to be most erroneous, and he has seen many deplorable instances of its fatal consequences. In acute diseases, the circumstance of the patient being pregnant ought to increase the activity of the practice, and in chronic dis-

easēs, palliative means cannot be injurious. In chronic affections of the liver, the author would not put the patient upon a course of mercury if pregnant, but he could suggest means, for the relief of the complaint at least, which could be adopted with safety.

But the cases in which practitioners are most commonly called to decide upon pregnancy, are two very opposite ones ; viz., where the woman has cherished the notion that she is in the family way ; and, secondly, where she is anxious to make it be believed that she cannot be pregnant. In the former of those cases, the patient would readily submit to the use of the stethoscope, and the practitioner might be enabled to give a decided opinion, and would probably be required to do so. Those who have actually had charge of such cases, can alone understand the consequences of abruptly disappointing the hopes of patients, under the circumstances alluded to.

As to the latter description of cases, it

would require more dexterous management than the author could pretend to exert, to induce any such persons to submit patiently to the application of the stethoscope. They make the utmost possible resistance, even to the examination of the state of the abdomen by means of the hand.

From these observations it is not to be inferred that the author is opposed to any improved method of ascertaining the existence of pregnancy. All that he wishes to put upon record as his opinion is, that admitting that by the application of the stethoscope to the surface of the abdomen of a pregnant woman a peculiar sound (called placental souffle) is heard, and that another sound, supposed to be that of the fœtal heart, is also perceived, he is convinced that few cases can occur in actual practice where this test can be required, or can be applied.

ON THE DURATION OF HUMAN
PREGNANCY.

On this subject it is well known that there still prevails a great discrepancy of opinion among medical men of the first respectability, as was evinced a little time ago, in the testimony given before the House of Peers in the case of the Gardner Peerage. This discrepancy seems to have arisen from two errors, viz., confounding the ordinary duration of pregnancy with the question of possible deviations, and confiding in the result of their own observations and experience, without reference to, or confidence in the recorded evidence of others.

To a person ignorant of the subject, these errors must appear very unaccountable, and yet the explanation is to be found in the obscurity of the subject, for the duration of

human pregnancy can in general be ascertained only by inference; and hence it requires, in any given case, a combination of circumstantial evidence, which can be seldom satisfactorily established.

It seems to have been a popular notion of mankind, that women are conscious of the act of conceiving, and certainly all the laws of filiation proceeded upon in England till lately, were founded upon this assumption. But nothing is more fallacious, as is now well known to the profession.*

In general, the first evidence of impregnation is the suppression of the catamenia, but in married women that cannot mark the precise day of conception, and it is only in the case of married women, that any reliance can be placed

* *Vide* Heberden's Commentaries, page 207.—To the facts there stated the author could add several instances which have fallen under his own knowledge.

in the testimony of the patient. In the temperate climates of Europe, there are no more, upon the average, than twenty-three days between each menstrual period during which a woman can conceive, and consequently, the mere suppression of the catamenia cannot mark the date of conception, because that event may have taken place on the very day after the last appearance, or on the day preceding the next expected appearance, and thus there may be a difference of twenty-two days.

In Great Britain, it is believed by most women that they are obstructed no more than nine periods, being thirty-six weeks, and consequently the ordinary duration of pregnancy, according to this calculation, is rather under nine calendar months, unless it be supposed that impregnation takes place on the very day after the cessation of the menstrual period, which would make thirty-nine weeks upon the average, being nine calendar months. Thus, reckoning any nine consecutive calendar months of the year, it will be found that seven

out of twelve amount to two hundred and seventy-three days, making thirty-nine weeks—nine calendar months from the 1st of May, make two hundred and seventy-six days. But in the majority of cases, it is well known that labour comes on several days before the estimated return of the tenth period.

One method, therefore, and perhaps the most certain, of ascertaining the fact, whether human pregnancy is limited to a precise fraction of time, may be decided by this test. If a woman pass the tenth menstrual period, it may be legitimately inferred that she has exceeded the ordinary duration of pregnancy.

Dr YOUNG, the first efficient professor of midwifery in the University of Edinburgh, who deservedly attained a high character among his cotemporaries, declared in his lectures (according to his own holograph manuscript in the author's possession), that "he had had patients who went to the day of the tenth eruption, but never longer." Dr Young was

cut off by a sudden fit of apoplexy in the fifty-second year of his age. Had he lived longer, further experience would have convinced him that there are occasional exceptions to this rule. Accordingly, the author had one case where the patient exceeded the tenth menstrual period by twelve days, another by sixteen days, another by twenty-four days, and one exceeded the eleventh menstrual period by seven days.

There could be no fallacy in those cases, because the author had charge of those patients (in consequence of their cases being rather peculiar) from the time that they passed the first period.

An objection may be started against this test of pregnancy, which requires attention. It may be said that a woman may be accidentally obstructed for a period, and that just before the return of the catamenia should have taken place, from some natural improvement in her constitution, she had conceived. This

is certainly a possible occurrence, but in the cases on which the author founds, it could not be, for the date of the morning sickness, and the period of quickening, taken in conjunction with the fact that the uterine health of the individuals in question had been always quite regular, precluded the possibility of any mistake.

If there had been any doubt in the author's mind on this subject, it would have been completely removed by a case which fell under his care a few years ago. A very healthy individual married in the 37th year of her age, and was supposed to have immediately fallen with child. She exceeded by some time her reckoning, and produced a still-born infant, which her medical attendant supposed to have been a week dead. The same circumstances happened in her second pregnancy, and therefore, when pregnant for the third time, she was brought from a distance to be under the author's care. He was assured that, in her two former pregnancies, she had carried the infant to the

eleventh menstrual period ; and his impression was, that the uterus had ceased to furnish due nourishment to the infant for some time before labour had taken place. His advice, therefore, was, that if she should exceed the tenth menstrual period, labour should be artificially induced. This patient did exceed the tenth menstrual period, and when a week had elapsed, labour was brought on, and she was safely delivered of a living infant. The same circumstances happened on two subsequent occasions, and this lady has three living children artificially brought into the world after she had passed the tenth menstrual period by one week.

Another method of reckoning the period of conception is, by the first sensation experienced by the patient of the movements of the infant. But this is a most fallacious mark, because this sensation occurs at different periods, not only in different women, but also in the same women in different pregnancies ; and because the knowledge of this feeling can only be derived from

the testimony of the woman herself, and her testimony is so little to be depended upon, generally speaking, that it is well known to the profession that no woman ever supposed herself pregnant, who did not believe that she was sensible of the movement of the infant.

One of the very respectable witnesses who gave their testimony before the House of Lords in the case of the Gardner Peerage, declared, that when an individual quickens, as it is called, at a particular period in her first pregnancy, she continues to do so in every subsequent pregnancy.* But this gentleman has stated the exception, and not the general rule; for while some women feel the first movement of the infant invariably at a particular period,

* Dr Conquest, Medical Evidence in the case of the Gardner Peerage, page 46, says,—“ Quickening takes place from the 16th to the 20th week, but when once a woman has quickened at a certain time, I believe with scarcely an exception, she invariably quickens at the same period afterwards.”

more than the majority experience a difference in different pregnancies.

The earliest period at which the author has known the movements of the infant perceived by the parent has been the eleventh week ; and when the appearance of the embryo at various periods of utero gestation, as exhibited in anatomical collections (and as has been verified by the author in his own collection), is considered, it must appear surprising that its movements could be perceived at so early a period.

But although, considered singly, the date of the first sensation of the movement of the infant cannot be admitted as a proof of the period of conception, it may furnish a collateral evidence ; and the author had occasion to witness three cases in one year, where he inferred from this symptom that the ordinary duration of pregnancy had been exceeded. Three patients, who had had a family, and who had no motive whatever for deceiving,

alleged that they had gone seven months with quick child ; and to the author's knowledge, they all exceeded the tenth menstrual period.

One of those cases was most remarkable. The patient, forty-nine years of age, was the mother of a large family ; she had had no child for six years, and had been obstructed for four periods, which she attributed to the natural decline of life. On the 25th of August, while engaged at a card party, she suddenly felt herself with quick child, and the surprise had such an effect upon her as to be remarked by those at the card table. Her pregnancy progressed from that date, but she was not delivered till the 3d of April.

From the difficulty of ascertaining the moment of conception in the human subject, medical men have deemed it their duty to inquire, whether, in our domestic animals, pregnancy be limited to a precise period, and the result of the inquiry has been unequivocal evidence that it is not. Mons. Tessier, in a

memoir read at a meeting of the Academie Royale des Sciences of Paris, 5th May 1817, has given a very interesting account of those discrepancies. He stated, that of five hundred and sixty-five cows, there was a difference of eighty-one days between the earliest and the latest period of their calving. In two hundred and seventy-seven mares, there was a difference of ninety-seven days between the earliest and latest period. In sheep, nine hundred and twelve of which he had watched, there was a difference of fifteen days between the earliest and latest period.

Mons. Tessiers' observations were extended to asses, buffaloes, swine and rabbits, and he found an equal discrepancy in all those animals. Even in the incubation of the eggs of the domestic fowl, there was a difference of from five to sixteen days.

The author's observations on the domestic animals have been confined to cows, and he has ascertained, by facts which are incontrovertible,

that the more calves the cow has, the longer is the duration of her pregnancy. One cow in his father's possession exceeded the ordinary period by three weeks.

These facts afford to the physiologist satisfactory evidence that human pregnancy cannot be limited to a precise fraction of time, but the habits of lawyers lead them to reject all inference from analogy, and to insist upon direct testimony of the fact of the protraction of human pregnancy; and on this point the vague assertions of medical authors furnish them, it must be admitted, with many plausible arguments, in favour of the opinion that human pregnancy is limited to a precise period.

One of the first, perhaps, which might occur, would relate to the progressive size of the infant. If human pregnancy were continued beyond nine calendar months, it may be said the size of the infant would be too large to pass. But in reply to this, it might be urged,

that the tardy development of the infant had occasioned the protraction of pregnancy.

That arguments founded upon the size of the infant cannot be admitted, is evident, because cases have occurred where the infant had attained a great size, without any deviation from the ordinary duration of pregnancy ; and, on the other hand, there are well authenticated cases where the infant has been under the ordinary size, and yet there could have been no doubt of the protraction. The lady, who quickened upon the 25th of August, and was not delivered till the 3d of April, produced a small puny child.

In some cases, however, where the infant proved to be of an enormous size, the patients, while in the agonies of child birth, and while their conviction was that they could not be safely relieved, declared that they had passed the eleventh period.

A more plausible argument founded upon medical testimony is, that in cases of extra

uterine conception, where the foetus is situated in the ovary or fallopian tube, &c., the expulsive action of the uterus takes place at the usual period of pregnancy, just as if the infant had been in the womb.

If this fact could be satisfactorily proved, it would certainly settle the question, but on looking into all the cases of extra uterine conception, which have been faithfully detailed by intelligent practitioners, it appears that this action of the uterus (which is the effort to throw off the decidua), has occurred at every different period of pregnancy.

Nothing can better illustrate the fallacy of medical testimony than this circumstance, as is clearly proved in Mr Turnbull's publication, entitled, *Case of Extra Uterine Gestation of the Ventral Kind*. While he has repeated, page 10, the hackneyed observation, that "it is worthy of remark here, that the uterus took on a particular disposition for action about the usual period of parturition," he has himself explicitly stated,

that the action alluded to, happened at the end of the eighth month of the supposed pregnancy.

The medical witnesses examined before the House of Lords, in the case of the Gardner Peerage, who declared their conviction, that human pregnancy is limited to a precise period, professed to found their belief upon the result of their own observation and experience, totally disregarding the recorded facts of respectable authors ; and the best illustration of the fallacy which had misled them, might have been elicited by examining them upon another physiological question, viz., the ordinary duration of human life. It is impossible to suppose that any of them could have declared his conviction, that the duration of human life is limited to a precise fraction of time. It must have been admitted, that now and then individuals live to a great age. But it is not probable that this admission could, in the case of each witness, have been founded upon his own experience and observation, for few prac-

titioners could declare that they had seen persons whose age exceeded an hundred years.

Another circumstance equally conclusive, respecting the incorrectness of their opinion, seems to have escaped the notice of the lawyers. Unless the printed record of their testimony be incorrect, they stated twenty-eight days to intervene between the menstrual periods during which a woman can conceive.*

* Sir Chas. M. Clarke is stated (page 8) to have said, "I should take the safest mode of giving the average reckoning, by counting the half of twenty-eight days, fourteen from the last period, and fourteen from the next expected one, and I should offer an opinion, that, in all probability, the effect might follow the cause at the end of forty weeks from that half of the interval, but I should know that it must take place at the end of forty weeks from the day upon which the last menstruation ceased, and before the day of expected menstruation."

Dr Granville (page 30) is reported to have said, "I have known a case of two hundred and eighty-five days from the latest period of supposed impregnation, taking as the point of departure the last day of the month previous to the missed period, that is to say, twenty-eight or thirty days after the last menstruation."

Now the twenty-eight days thus specified, include the period, that is, women in Great Britain, who menstruate regularly, are unwell as it is called every twenty-eighth day, and as they cannot conceive during menstruation, and as that process generally lasts four or five days, there are only twenty-three or twenty-four days as the interval between each period during which conception can take place.

As already stated, however, the two great errors which the medical witnesses on that occasion committed, were, *first*, not drawing the line of distinction between the ordinary period of pregnancy, and the deviations which may occur; and, *secondly*, founding their belief upon their own limited observation and experience, disregarding the testimony of others.

It was the author's duty, from his earliest outset in professional life, to pay particular attention to this subject, and he can vouch for the following facts.

First, A married lady of unexceptionable character, ceased to menstruate on the 1st of April. She distinctly perceived the movement of the infant on the 10th of August, and mentioned this to the author at the time. She was not delivered till the 25th of February.

Secondly, A respectable lady, the mother of a large family, was unwell for the last time, about the middle of January, and breeding symptoms were distinctly perceived about the beginning of March, at which time (viz. March 4,) her husband's private affairs led him to leave home for some months. But this lady was not delivered till the 16th December.

Thirdly, A lady was delivered of her first infant, on the 13th of June. Although she suckled her infant, she became unwell on the 1st of August. In September, her health declined so much, that it was deemed necessary to give up nursing, the presumption being, that she was in the family way. She was delivered upon the 28th June.

Fourthly, An unmarried lady consulted the author respecting the time at which she should disappear for the purpose of being confined secretly. She stated that she had menstruated in the beginning of November, and that she might have conceived upon the 5th of that month. She was not delivered till the 16th of September.

Fifthly, The author has been called in to several cases where married women of respectability had been a very unusual time in labour, who expressed their conviction, that they could never bear the infant in consequence of its extraordinary size, and that they could not survive the delivery, because they had exceeded the eleventh menstrual period. In those cases, from the unusual size of the infant, it became necessary to tear it away piece-meal, and in more than one of those cases, the fears of the woman were realized, death having taken place a day or two after delivery.

Adding that of the patient where artificial

delivery was three times successively induced after she had passed the tenth menstrual period by one week, the author considers himself warranted in declaring his solemn conviction, that he has met with, at least, twelve cases, in the course of practice, where there could not be the shadow of doubt of the protraction of human pregnancy beyond the ordinary period.

But he does not think himself entitled to give a decided opinion on the period to which the protraction may be extended. He is quite certain, however, that the term allowed by the Code Napoleon, viz., three hundred days, is too limited, and he is inclined to regard ten calendar months, which he believes to be the established usage of the Consistorial Court of Scotland, as a good general rule, liable, as the Napoleon Code has admitted, to exceptions, upon satisfactory evidence that menstruation had been obstructed for a certain period.

ON THE MANAGEMENT OF THE FIRST STAGE OF LABOUR.

That the act of human parturition is accompanied with pain and fatigue, at least in civilized states of society, has been universally acknowledged, and the sufferings of the woman have been in most languages metaphorically compared to those of travellers in countries where journeying was a painful and tedious, and hazardous undertaking.

Systematic writers on the practice of midwifery, adopting this popular notion, have divided the several changes which take place during the birth of the infant into stages, and although there has been considerable diversity of opinion on the definition of those stages, or the combination of phenomena which should constitute those stages, it is evident that only

one arrangement can be applicable to every case of labour. Before a pregnant woman can be safely delivered of her burden, the womb must be opened, the infant must be accommodated to the passages, and after its birth, the secundines must be separated and thrown off. By the first stage of labour, therefore, is meant all that happens previous to the complete dilatation of the os uteri.—The author was a very short time in practice when he saw reason to believe that the management of this stage had been much misunderstood by the profession.

He was first led to doubt the safety of the established practice, from reasoning upon the subject. He observed, that when the natural powers are alone trusted to, this stage is often greatly protracted, and he of course inferred, that injurious effects must be the consequence. He considered, that upon the occurrence of every uterine contraction, there must be a certain influence on the action of the heart and arteries, and that if pain and sleeplessness were

continued beyond a limited time, there must be an exhaustion of sensorial power. He concluded, therefore, that where the first stage of labour is not completed within a certain time, the strength of the patient must be proportionally lessened, the uterine action must be enfeebled, and the circulation of the blood must be disturbed.

But when he found that the most respectable practitioners, both British and Foreign, had not adverted to those circumstances, and had expressly deprecated all interference with the first stage of labour, he necessarily felt diffident in promulgating this opinion, and therefore delayed doing so, till he could produce satisfactory evidence of its validity.

On this subject, Dr Denman, whose works are deservedly of high authority among British practitioners, has thus expressed himself, vol. i., page 375:—"By regular returns of pain, or with the varieties before mentioned, with many others which it is impossible to enumer-

ate, the os uteri becomes at length wholly dilated. Whether a short or a long time be required for this purpose, it is the duty of the practitioner to abstain from interfering in this part of the process. It may sometimes be necessary to pretend to assist, with the intention of giving confidence to the patient, or composing her mind. But all artificial interposition contributes to retard the event so impatiently expected, by changing the nature of the irritation, and the action thereon depending, by inflaming the parts, and rendering them less disposed to dilate ; in short, by occasioning either present disorder or future disease. For these reasons we must be firm, and resolved to withstand the entreaties which the distress of the patient may urge her to make, as we must also the dictates of vehemence and ignorance. Others may be impatient, but we must possess ourselves and act upon principle. The event will justify our conduct, and though there may be temporary dislike and blame, if we do what is right there will be permanent favour and reputation."

This opinion and practice seem to be adopted by the present eminent Professor of Midwifery in the London University, Dr D. Davis, the latest English author. He says, page 963 of his Principles and Practice of Obstetric Medicine, that "the duty incident to the management of the first stage is ordinarily little more than that of watching the progress of the labour."

"A merely slow dilation of the orifice of the womb very rarely compromises the eventual safety of the case. Patience may perhaps be represented as the best natural remedy for this state of things."—Page 969.

It was not till the year 1800, therefore, that the author ventured, in lecturing, to state as the result of his observation and experience for about fifteen years, that unless the first stage of labour (supposing that there are regular pains) be completed within twelve or fourteen hours from its real commencement, the following consequences may be dreaded.

Firstly, That the powers of the uterus may be inadequate to expel the infant with safety to its life, or to the future health of the parent.

Secondly, That after the birth of the infant, the uterus may contract irregularly, so as to occasion the retention of the placenta.

Thirdly, That after the expulsion of the placenta, the contractions of the uterus may be too feeble to prevent fatal hæmorrhagy. And,

Lastly, That, supposing the patient should escape all those untoward circumstances, febrile or inflammatory affections of a most dangerous nature may ensue from the previous protraction of pain and the irregular distribution of the blood.

Every year's experience since that time has furnished innumerable illustrations of the accuracy of this opinion. One of the most remarkable, and certainly the most interesting (for it excited the sympathy of the whole na-

tion), was that of the PRINCESS CHARLOTTE. In her case, Dr Denman's directions were implicitly followed, and all the world knows the deplorable consequences. The first stage of labour was allowed to go on from at least Monday night at seven o'clock, till Wednesday afternoon at three o'clock. At six o'clock of that afternoon the meconium of the infant was discharged, and at nine o'clock a still-born infant was thrown off. The placenta was retained by the hour-glass contraction, internal uterine hæmorrhagy followed, and the Princess sunk in little more than two hours after delivery.

In this most distressing case, the effects of allowing the first stage to be protracted, were strikingly manifested. The infant was destroyed by the continued pressure of the uterus upon its navel string—the placenta was retained by irregular contraction of the uterus—internal hæmorrhagy took place from the same cause; and such was the exhaustion of the sensorial power, that the loss of twenty ounces of

blood* proved fatal to a young person, who had, previously to the commencement of labour, been in the enjoyment of robust health.†

* A particular account of the case of the Princess Charlotte, dated December 1, 1817, is inserted in the eighth volume of the London Medical Repository, Monthly Journal and Review. This account bears internal evidence of having been communicated under the authority of Sir Richd. Croft himself, but there are three important omissions, in consequence of which, the true nature of the case cannot be understood. *First*, It was not till three in the afternoon of Wednesday that the head of the infant cleared the os uteri, and consequently the first stage of labour was allowed to proceed from seven o'clock P. M. of November 3, till three o'clock P. M. of November 5, being forty-four hours. *Secondly*, At six o'clock P. M. of November 5, the meconium of the infant was discharged, which was a clear evidence that the life of the infant was in jeopardy, but the labour was allowed to proceed three hours longer. *Thirdly*, The exact quantity of blood found in the uterus after death is not specified. It is said to have been considerable, but, in point of fact, it did not exceed twenty ounces.

† The author perhaps erred by refraining from any allusion to this deplorable case for some time after it occurred, that is, during the life of Sir Richd. Croft. He contented himself with shewing the importance, and explaining the means of limiting the duration of the first stage of

From the time above specified, viz., 1800, the author has advised his pupils to secure the termination of the first stage of labour within twelve or fourteen hours from its actual commencement. By this is to be understood, the fact of there being a continuance of regular pains, for it sometimes happens that after regular pains have commenced, the agitation of the patient, or the mismanagement of the attendants, occasion a suspension for some hours. If there be no injurious pressure upon the passages during that suspension, the patient's strength is recruited, and the duration of the first stage is to be reckoned from the recurrence of the pains.

Young practitioners, the author is aware, may

labour to twelve or fourteen hours, and he did not insist on this doctrine with his usual earnestness. Had he acted otherwise—had he brought forward the case as proving so incontrovertibly the validity of the change in the ordinary practice which he had so long adopted and advocated, he should have had to reproach himself with being accessory to the sad catastrophe of Sir Richd. Croft.

be deceived in their estimate of the duration of the first stage, especially in cases where the woman has had a family, for spurious pains are apt to precede the true ones, not only for hours but for days. Unless there be a decided tightening of the edges of the os uteri during the pain, labour has not commenced.

By the adoption of this rule (viz., securing the completion of the first stage of labour within twelve or fourteen hours), the author can confidently assert that no patient under his charge, for the last thirty-five years, has been above twenty-four hours in labour, and excepting in cases of disproportion, none so long.*

He begs leave to contrast the result of his practice with the recorded evidence of the protraction of labour in London, Paris and Dublin.

* He once supported the perinæum, without leaving the patient for a moment, for twelve hours, but in that case, the first stage lasted no longer than eight hours.

Dr Ramsbotham, Part i., page 248, records the case of a lady, whose labour was protracted from Monday, June 17, 1816, to Friday morning, June 21. He mentions another case, where the patient had been twenty-four hours in labour, on the 21st January 1811, and she was not delivered till Tuesday the 24th. In the second of those cases, it appears that the first stage had been allowed to go on from Sunday the 20th January to Wednesday afternoon the 23d, or above sixty hours ; in both cases the presentation of the infant was natural.* The same author has detailed a melancholy case, in further illustration of the injurious protraction of the first stage of labour. The first stage commenced on Sunday evening, when the membranes gave way. On Wednesday evening the head of the infant passed upon the perinæum, and before midnight the head was

* Sir Chas. M. Clarke says, in his evidence before the House of Lords, in the case of the Gardner Peerage, " I have known a labour last five, possibly six days ; that I should say was the ultimum tempus."

born, but at half past three of Thursday morning, the doctor was sent for to extract the shoulders of an enormous dead infant. The poor patient died within two hours. Several other cases of protracted labour are recorded by Dr Ramsbotham, to which reference is made in the subjoined note.*

Dr D. Davis, in the work already alluded to, page 953, after objecting to Dr Denman's definition of natural labour, expressly says,—“ We constantly meet with labours which in every other respect might be considered natural, but which require more than twenty-four hours for their safe and prosperous accomplishment.” And in his testimony before the House of Lords, in the case of the Gardner Peerage, on being asked, “ How long have you known a woman continue in pains of labour ?” made the following answer : “ In my own practice, I should not, as a general principle, allow a woman

* Pages 322, 326, 329, 332, 335, &c.

to remain in labour more than about thirty or forty hours, that is to say, if the labour be a decidedly active labour, and that is going beyond the period it would be generally safe." On being farther questioned, "How long have you known the labour to continue?" his reply was,—“I believe I did lately publish a case that went to the fourth day.”

Madame la Chapelle has published an account of fifteen thousand three hundred and eighty patients delivered in the Hospice de la Maternité of Paris, of which the following is a short abstract. Ninety-three individuals were delivered by the forceps, of whom she has recorded the history of forty-nine cases. She has given a table, page 147, vol. i., of the duration of labour in two thousand three hundred and ninety-five patients, after their admission into the Hospice de la Maternité, in the year 1811, by which it appears that twenty-six women were twenty-four hours in labour; nine were thirty hours; six were thirty-six hours; four were forty-eight hours, and

one sixty hours. But, in her account of the forceps cases, which occurred in 1816, she states that seven women were thirty hours; two were thirty-three hours; one forty-eight hours; two three days; two several days, and one had been nearly three days under the first stage. Thirteen women of the forty-nine died. Twenty-six infants were born alive.—Vol. i., page 176, *et seq.*

Dr Breen published, in the year 1808, in the Dublin Medical and Physical Essays, Observations on the Management of Tedious Labour, and re-published the same in the Edinburgh Medical and Surgical Journal for 1819. In that paper he gives the following account of the duration of labour in the great Lying-In Hospital of Dublin.

Of one hundred and ninety-six women in labour of their first child, thirty-four had been between thirty and forty hours in labour; one hundred and two between forty and fifty; eleven between fifty and sixty; eight between

sixty and seventy ; twenty-four between seventy and eighty ; four between eighty and ninety ; twelve between ninety and one hundred ; and one between one hundred and ten and one hundred and twenty hours. These one hundred and ninety-six women produced one hundred and thirty-five living infants, and fifteen of the women died. It is to be remarked, however, that those one hundred and ninety-six cases occurred in the course of six years, and were selected out of eleven thousand six hundred and five women delivered during that time.

Dr Maunsell, accoucheur to the Wellesley Female Institution in Dublin, has reported, in the *Edinburgh Medical and Surgical Journal* for 1833, page 295, the “obstetric practice” of that hospital during the year 1832, and has stated, that out of four hundred and twenty-three labours, fifteen lasted between twenty-four and forty-eight hours ; two lasted sixty hours, and one seventy-two hours.

In the 15th No. of the *Dublin Journal* of

Medical and Chirurgical Science, Dr Maunsell has continued his report of the "obstetric practice" in that institution. He states, that of four hundred and sixteen cases which occurred between the 1st January 1833 and the 1st January 1834, the duration of labour in twenty-one women was between twenty-four and forty-eight hours; in three women, fifty-six hours; in three, sixty-four hours, and in one, seventy-two hours.

Dr Thomas Edward Beattie has published, in the 22d No. of the Dublin Journal of Medical and Chemical Science, his first report of the New Lying-In Hospital, Dublin, for the year 1834. In that report he states, that of three hundred and ninety-nine women delivered in that Hospital, twelve had been between twenty-four and thirty-six hours in labour; four between thirty-six and forty-eight hours; one between forty-eight and fifty hours; one between fifty and ninety-six hours; and one between ninety-six and one hundred and thirty-six hours.

Dr Collins of Dublin has just published an interesting work, entitled, *A Practical Treatise on Midwifery*, containing the result of sixteen thousand six hundred and fifty-four births occurring in the Dublin Lying-In Hospital during a period of seven years. According to his account, of fifteen thousand eight hundred and fifty patients, fifteen thousand and eighty-four were delivered within twelve hours from their admission into the hospital; five hundred and two within twenty-four hours; eighty-five within thirty hours; forty-nine within thirty-six hours; and one hundred and thirty above thirty-six hours.

The result of those tables may be briefly stated. Taking Dr Breen's and Dr Collins's account of the practice in the great Dublin Lying-In Hospital, it appears that out of above twenty-seven thousand deliveries, every sixtieth woman had been allowed to continue in labour above twenty-four hours; that in the Wellesley Institution of Dublin, taking the two years reported by Dr Maunsell, the duration of labour exceeded twenty-four hours in every eigh-

teen women and one-fourth ; and that in the New Lying-In Hospital, under the charge of Dr Beattie, one woman in twenty-one had her labour protracted above twenty-four hours.

While in London, Paris, and Dublin, the author's suggestions respecting the management of the first stage of labour have hitherto been totally disregarded, he has much pleasure in recording, that his friend, Dr Burns of Glasgow, has gradually become a convert to this innovation, evidently from his own intelligent observation in practice. In his first edition, page 242, he says,—“ It is impossible to determine how many hours a labour may be permitted to continue, for time alone is not to be our rule—we must be regulated greatly by the effects of the labour.” While, in his second edition (published 1811, page 320), he repeats the same words, he says, page 318,—“ If, on the other hand, the os uteri be lax, and thin or soft, it is both safe and advantageous to dilate it gently with the finger during a pain. If this be done cautiously, it gives no additional un-

easiness, whilst the stimulus seems to direct the action of the uterine fibres more efficiently towards the os uteri, which sometimes thus clears the head of the child very quickly, and the pains which formerly were severe, but in the language of the patient unnatural, and doing no good, become effective and less severe though more useful."

In his fifth edition, published in 1820, he adds to the above observations the following.

" In the case I have just considered, I have spoken of the effects of dilating the os uteri, but I do not mean to say that the practice is useful in such a case alone ; for in most cases of tedious labour it is beneficial, and as the subject is important, I shall explain my sentiments on it fully. Forcible and irritating dilatation of the os uteri, even when it is not productive of dangerous consequences, is apt to occasion irregular or spasmodic action of the uterus. Two circumstances are necessary to

render it safe; the os uteri must be lax and dilatable, and the dilatation must be gradually and gently effected during the continuance of a natural pain. If attempted in the absence of pain, and especially if attempted so as to give pain, it is apt to excite partial or spasmodic action, and under any circumstances, violent or forcible dilatation, besides injuring the uterine action, may lay the foundation of future disease. It is done best by pressing on the anterior edge of the os uteri during a pain, with two fingers, with such moderate force as shall not give additional pain, and shall appear to excite the natural dilatation as much as to produce mechanical opening. By doing this for several pains in succession, or occasionally during a pain, at intervals, according to the effect produced, and the disposition to yield, we shall soon have the os uteri completely dilated. This is an old principle, but it was rashly practised, and too universally adopted, which made it meet with just reprobation, and some knowing this, may be surprised at meeting with such an advice in modern times. Let not the principle

suffer from its abuse, else where is the plan which could stand its ground? It is perfectly clear, that when the process is going on well, interference is improper, but it is no less evident, that if a long time is to be spent in accomplishing the first stage of labour, or dilatation of the os uteri, the vigour of the uterus and strength of the patient may be impaired so much as to render the subsequent stage dangerously tedious, or to prevent its completion, at least consistently with safety. The first stage of labour ought always to be accomplished within a certain time, varying somewhat according to the constitution of the patient, and the degree of pain. It is an undeniable proposition, that there is in every case a period beyond which it cannot be protracted without exhaustion, and it is no less certain, that if we wish to avoid this exhaustion; which may be followed by pernicious effects, we have only the choice of either suspending the action altogether for a time, or of endeavouring to render it more efficient, and of effecting the desired object within a safe period. The first is

sometimes adopted, but is not always practicable, nor is it always prudent to counteract uterine action by strong opiates. The second is safer, and one of the means of doing so is that under consideration. If the pain be continuing without suspension, or an interval of some hours, and the labour be going on all the time, but slowly, it is a good general rule to effect the dilatation of the os uteri within ten or twelve hours at the farthest from the commencement of regular labour. This is done if the os uteri be flat, and applied to the head by the method above described. If it be somewhat projecting, it is aided by introducing two fingers, and extending them laterally with gentleness during a pain. The dilatation is easily and safely effected, if the case be proper for it; if not, bleeding or an opiate, if the former be not indicated, will soon bring about a favourable state. Of the benefit and perfect safety of this practice I can speak positively, and am happy to strengthen my position by the authority of Dr Hamilton, who makes it a rule to have the first stage of labour

finished within a given time." Dr Burns has repeated the same in his last edition.*

It is most gratifying to observe the progress by which this opinion has been impressed upon the mind of Dr Burns.

Having laid down the principle, that wherever there are regular pains, the first stage of labour should be completed within twelve or fourteen hours from its real commencement, the author, before detailing the practice, considers it necessary to recal to the reader's recollection the mechanism of this stage.

That the os uteri is forced open by the labour pains, which in fact are the contractions of the muscular fibres of the uterus, nobody doubts. But perhaps it has not been sufficiently adverted to, that two effects are pro-

* *Vide* Sixth edition, page 418; eighth edition, page 411.

duced by those contractions, viz., the thickening of the substance of the uterus, and of course the diminution of its volume, and the forcing of the uterine contents against the aperture of the os uteri. The former of these effects is proved by the gradual thickening of the edges of the os uteri, for however thin they may be at the commencement of labour, they become considerably thickened previous to their complete dilatation.

The ordinary treatment of the first stage, where the process proceeds favourably, is well understood. The patient is kept in a cool atmosphere—in a state of quiescence—with cooling diet ;—the bowels are cleared artificially, if necessary, and any uncomfortable feelings are palliated as they occur. And when the os uteri is dilated so much, that a crown piece could be passed through it, she is put to bed in the posture in which she is to be delivered.

With respect to the deviations in the progress of this stage, it is unnecessary to take

into consideration those rare cases where it advances with great rapidity. The author has ascertained, that in some individuals, the dilatation of the os uteri proceeds unconsciously to the patient for many days before uterine contractions occur.* In such cases, the first pain completes the dilatation, and if the woman have already had a child, the birth of the infant is accomplished within less than half an hour. It is obvious, that no other means can be adopted to guard against such surprises, than having a well instructed midwife in constant attendance, for at least a fortnight before the expected period of the delivery.

Protraction of the first stage is the more common deviation, and according to the author's experience, it arises from the following causes, viz., premature discharge of the liquor

* He has repeatedly ascertained, that in some individuals, the aperture of the os uteri could admit the introduction of a half crown piece a fortnight before labour actually commenced.

amnii—natural toughness of the os uteri—contraction of the cervix uteri, in consequence of an undeveloped band of fibres—great relaxation of all the parts lining the pelvis—and the interception of a portion of the cervix uteri, between the presenting part of the infant, and the bones of the pelvis.

Firstly, The discharge of the liquor amnii not unfrequently takes place previous to the commencement of uterine contractions, which is a most untoward occurrence, especially in a first labour, as it tends to render the process tedious, more than usually painful, and sometimes dangerous. Tedious, because one of the powers (viz., the soft wedge formed by the membranes) by which the os uteri is opened, is lost—painful, not only because the uterine contractions are stronger than the constitution can bear at the beginning of labour, but also, because the person of the infant presses upon the edges of the os uteri—and dangerous, because the strong uterine contractions, if the dilatation be tardy, tend to alter the position of the infant.

This latter effect of the premature rupture of the membranes was noticed by the author at a very early period of his professional life. He was repeatedly called in to cases of the presentation of the shoulder, where most intelligent practitioners assured him, that in the early part of the labour, they had distinctly felt the head present, and he had no doubt of the fact, and that the alteration of the position of the infant was occasioned by the strong labour pains, and the undilated state of the os uteri.*

* This opinion has been much misunderstood by a respectable old pupil, the late Dr Kelly of Dublin, in his *Essay on the Spontaneous Evolution of the Fœtus*, page 4. He says, "The following observation, which I find in Dr Hamilton's *Treatise on Female Complaints*, is not remarkable for the perspicuity usually observable in his writings." "But when the water that surrounds the infant is discharged prematurely, the strong pains which follow may push the head to one side, and the shoulder or some other part may thus be made to present, as it is technically expressed."

"That the head may, under certain circumstances, be pushed to one side, I can readily comprehend, but how the premature discharge of the water produces such an effect I cannot perceive."

Secondly, Natural toughness of the os uteri. There is a wonderful difference in the facility with which the os uteri opens in different individuals, and the appearance of the patient furnishes no correct indication on this point, for in many strong muscular women, the dilatation proceeds easily, while in many relaxed delicate individuals, its progress is both tedious and painful.

Of this general proposition, many cases might be cited in illustration, but it may be sufficient

Of the fact, that the head may be pushed aside, and the shoulder forced down, there can be no doubt, and the explanation appears to the author abundantly simple. Every practitioner knows that the uterine contractions are much stronger after the discharge of the liquor amnii than while the membranes are entire. These contractions act directly upon the infant. If, therefore, its head be still upon the brim of the pelvis, and the undilated state of the uterus prevent its advance, it may be pushed to one side and the shoulder forced down. The premature rupture of the membranes therefore acts in thus altering the position of the infant by exciting violent uterine contractions at a period when the apertures do not permit the advance of the infant.

to mention two which happened within a few weeks of each other. One of the patients was thirty-four years of age. She had been supposed from an early period of her pregnancy to be liable to inflammatory affections, and had been bled and starved to so great a degree that, when labour begun, she was so relaxed, that the skin of her arms did not fit the subjacent parts. When the author was called in, she had been for many hours in hard labour, and although every two minutes there was such pressure upon the os uteri, that there was great risk of its bursting, its aperture could admit no more than the point of the fore finger.

The other case was that of a lady who had always lived in the country, who was of a robust form, and of a rigid fibre, and who had exceeded the fortieth year before marriage. In her case, the dilatation was completed within eight hours.

Where the first stage is retarded by the natural toughness of the os uteri, the sufferings

of the patient are always more or less distressing. There is a feeling of wretchedness, which is not relieved during the intervals of the pains. Sickness at stomach, with excessive retchings, are very usual symptoms—restlessness and despondency are the natural consequences.

Thirdly, Resistance to the dilatation, in consequence of an undeveloped band of the cervix uteri, is happily of rare occurrence, for if not understood, it is productive of a degree of distress which can hardly be described. The author has been called in to cases where patients have been suffering from this cause for above thirty hours, and where the symptoms were truly alarming. Great heat of the surface—frequent pulse—constant nausea—and occasional tremors resembling convulsions, and distinguished only by the consciousness remaining entire, are the symptoms produced by the protraction of labour from this cause.

As has been already mentioned, this state of the cervix uteri is of rare occurrence, in so

much, that the author has not seen, he believes, above a score of individuals in whom it has occurred, but he has found that it is constitutional. He attended one patient in whom it occurred in seven successive pregnancies. This lady had had three children before she was put under his care, and each of her labours had been of more than three days duration.

This cause of protracted labour can be detected without difficulty, for the edges of the os uteri swell during the pain, as if distended with air, becoming relaxed when the pain ceases; and notwithstanding strong labour throes, neither the membranes nor the infant are brought in contact with them. If, during the interval of the pains, the finger be carried up within the os uteri, the stricture of the cervix will be distinctly perceived.

Fourthly, Relaxation of all the parts lining the pelvis is most commonly the effect of frequent child-bearing in women of a relaxed habit. In such cases, the contraction of the

uterus, instead of dilating the os uteri, forces down the contents of the pelvis upon the external parts ; and although the author has been called to one case only where the undilated uterus was partially protruded through the external parts, he has attended several cases where, but for proper assistance, this untoward occurrence must have happened. In one case, where he had to perform the operation of turning, he felt distinctly a band of the vagina protruded along with the head.*

Fifthly, The interposition of a portion of the cervix uteri between the head of the infant and the bones of the pelvis happens where the membranes are prematurely ruptured—where some part of the infant, together with part of the cervix uteri, had entered the pelvis previous to the commencement of labour, and (where the infant's head is unusually large, or the apertures of the pelvis rather small. /

* To his surprise this patient recovered without one unfavourable symptom.

This cause of protraction may be distinguished by there being, notwithstanding the continuance of strong pains, only a very slight tightening of the edges of the os uteri on the occurrence of every uterine contraction, after there had been a certain progress in the dilatation. The explanation of this cause of protraction is quite obvious. The pressure of the head of the infant forcing a band of the cervix uteri upon the bones of the pelvis must prevent the contractions being extended to the os uteri.

If this cause be overlooked, the continued pressure must induce all the injurious effects of interrupted circulation, and must prove equally dangerous to the infant and to the mother.

In the year 1804, the author had occasion to see a very deplorable illustration of this error. One of his old pupils (dead several years ago) called upon him one winter evening about ten o'clock, to consult him about the case of a poor woman, a soldier's wife. He said that she had

been three days and nights in continued labour, but that the os uteri was still little dilated, although in the intervals of the pains, its edges felt quite relaxed.

On considering the circumstances, the author's impression was, that the dilatation of the uterus was prevented by the interception of a portion of the uterus between the bones of the pelvis and the head of the infant, and he explained to his friend, who was one of the most conscientious and humane practitioners he ever knew, the means of ascertaining the fact, and the treatment to be adopted, if it should prove correct.

Early next morning, this gentleman called upon him, to mention that the opinion of the author was strictly accurate; that he had found the neck of the womb strongly wedged between the head of the infant and the bones of the pelvis; that as the cuticle of the infant was peeling off, and its head was in an emphysematous state, he had considered it his duty

to relieve the poor woman with the least possible delay, and had accordingly delivered her by means of the crotchet, which he had found a much easier operation than he had anticipated. He added, that the poor woman was very weak, and that a visit from the author (which, by the by, had been offered on the previous night, and declined) would be most satisfactory to him.

There was no delay in paying the requested visit ; for the state of the patient, as described, seemed to be most urgent. The poor woman was in fact found to be moribund, and she survived the delivery only about ten or eleven hours.

It was seen, on inspecting the body, that not only the parts which had been in contact with the head of the infant, but even also the muscles attached to the brim of the pelvis, were in a state of gangrene.

In relaxed women, who have had a large

family, where the membranes burst prematurely, the head of the infant included in the uterus is apt to be pushed down into the cavity of the pelvis, in the course of an hour or two after the occurrence of strong pains, and if it be of an unusual size, by its intercepting a band of the uterus between itself and the bones of the pelvis, it occasions a compressible swelling of the os uteri, which is apt to perplex a young practitioner.

Having explained the causes of the protraction of the first stage, the appropriate means for counteracting these fall next to be considered.

The author is most anxious to explain, to the junior part of the profession especially, what is meant by the protraction of the first stage, for he is every year called in to cases where great mistakes upon this point are committed, chiefly in consequence of supposing spurious pains to be the true pains of labour. He has already hinted at the means of dis-

tinguishing the two, and he now repeats that spurious pains are irregular in their recurrence and duration, and that they produce no influence upon the edges of the os uteri. True pains, on the contrary, recur with regularity, are preceded by feelings which announce their approach, and are accompanied with a tightening of the edges of the os uteri. It must be allowed that the tightening is comparatively trifling in those cases where a band of the uterus is intercepted between the head of the infant and the bones of the pelvis, but there are means of distinguishing the two cases, to be detailed by and by. There is another source of error; for it is certainly possible, that after the first stage is fairly begun, it may be suspended for some hours, the uterine contractions no longer recurring. If, during this interval, there be no injurious pressure upon any part of the mother, the previous pains are not to be reckoned, but the duration of the first stage is to be dated from the recurrence of pains.

Premature rupture of the membranes is an

accident which, in many cases, can be neither foreseen nor prevented, as it may take place spontaneously before there be any contractions of the uterus. Although always an untoward occurrence (for the reasons already specified), especially in a first labour, it does not invariably protract the first stage ; but if it be allowed to do so, the patient's strength is sooner exhausted than in some of the other cases of protraction, because, after the discharge of the liquor amnii, the uterus acts with great force, which is apt to wear out the woman's strength.

A young practitioner must therefore naturally wish to be informed what is to be done in a case where the liquor amnii is suddenly discharged without previous pain. It is absolutely necessary to institute an examination, in order to ascertain, *first*, if there be any progress in the dilatation ; and, *secondly*, if the position of the infant be natural. This is a duty which is always disagreeable to the patient, and is therefore often resisted, for it is not easy to make her understand the utility, or even the

necessity of such an examination; but, in general, it is unsafe to dispense with this investigation.

Many respectable practitioners recommend, that where the liquor amnii is discharged without previous pains, the abdomen should be firmly compressed by means of a roller, in order to secure the complete discharge of the water, and to accelerate the accession of labour throes. But, unless under particular circumstances, viz., where the patient's health had been previously in a precarious state, the author has never sanctioned such means.

When the pains take place, if the dilatation prove tedious—that is, if the continuance of strong pains for six or eight hours do not advance the dilatation to such a degree as to give reason to expect its completion within a few pains—it becomes necessary to interfere, lest the patient's health should suffer.

Generally speaking, venesection, to the ex-

tent of from sixteen to twenty-four ounces by weight, furnishes the readiest means of promoting the dilatation. But cases from time to time occur, where the patient cannot bear the subtraction of blood, and where it becomes necessary to administer an opiate enema. There are also cases where supporting the os uteri during a pain is indispensable.

For the relief of the second cause of protraction, viz., natural toughness of the os uteri, various means have been employed. In some cases, violent sickness and vomiting are followed by a sudden dilatation of the os uteri, after it had resisted for many hours the strongest labour pains; and it has, therefore, often occurred to the author that artificial vomiting might be useful in such cases. But he has not yet ventured upon the experiment, because vomiting during the first stage of labour, though not an unfrequent symptom, must necessarily endanger the rupture of the uterus, and because, in some particular individuals, it is extremely difficult to allay vomiting when once

excited. He admits, however, that if he had not ascertained that other means were both useful and safe, he should have made a fair trial of the effect of vomiting.

Hitherto, in a very large proportion of the cases of protraction from this cause, he has found copious blood-letting rapidly promote the dilatation. By copious blood-letting he means abstracting as much blood by one venesection as he should direct in a patient of a similar constitution, if she were labouring under an acute inflammatory disease.

In cases of relaxed debilitated women, with toughness of the os uteri, venesection cannot be ventured upon, and it becomes necessary to administer an opiate enema. The author had recourse to this practice, he must confess, with great reluctance, having seen many cases where the administration of opiates had been prejudicial. But he can now say, that, under proper management, the practice is safe.

The utility and safety of the practice are mainly influenced by the time at which it is adopted. If strong and frequent pains, continued for six or eight hours, do not decidedly promote the dilatation, the opiate enema should be had recourse to, and it will seldom disappoint the expectations of the practitioner.

But if the first stage (with strong and frequent pains) be allowed to go on for twelve hours or upwards, without having completed the dilatation of the os uteri, there is the risk that the opiate will so far interfere with the progress of the labour, that instrumental delivery shall become necessary.

In some of the periodical medical publications, certain speculative proposals have been made for dilating the os uteri, such as the actual application of the extract of Belladonna, but the author has never considered it fair to make any such experiments.

The third cause enumerated requires, in the

first place, venesection, if the patient's health will permit. *Secondly*, The administration of an opiate enema. *Thirdly*, Half an hour after the opiate, pressure on the resisting band of the uterus with the point of the finger during each successive pain. The finger is to be carried above the stricture, and the pressure is to be made from within outwards. In all the cases to which the author has been called, these means have overcome the difficulty in the course of an hour.

The fourth cause of the protraction of labour in the first stage, viz., such a relaxation of all the parts lining the pelvis, that the undilated uterus is, during every pain, forced down upon the external parts, may be easily counteracted. It is only necessary, by the application of two fingers to the edges of the os uteri, to retain the uterus *in situ* during every pain, till the head of the infant pass into the vagina. The practitioner is to confine his assistance to the attainment of this object alone, and he is most particularly to guard

against any attempt at forcing open the os uteri.

As already mentioned, the interposition of a band of the uterus between the head of the infant and the bones of the pelvis, is a more frequent cause of the protraction of the first stage than has been generally supposed.

To an inexperienced practitioner, the first difficulty in such a case, would be that of ascertaining the cause of the protraction, and as there are complications, it is not easy to give directions for distinguishing this particular case, which can be applied in every instance.

The rupture of the membranes at an early period of the labour generally happens, but not invariably. The author has been called in to several cases where the patient had had a large family, where the membranes were entire, the head of the infant considerably advanced within the pelvis, with regular pains, and where the dilatation of the uterus, after proceeding to

a certain extent, had remained stationary for several hours. On rupturing the membranes, the pains still exerted no influence in dilating the os uteri.

But the most certain evidence of this cause of protraction is, that strong pains are not felt to advance the head of the infant. In ordinary cases, especially where the patient has formerly had a child, after the head of the infant has fairly entered the pelvis, every pain can be distinctly perceived to press it more or less forward, even although resisted by the undilated state of the uterus. But in the case under consideration, it remains wedged at one spot, although not in contact with the os uteri.

For the purpose of overcoming this cause of difficulty, it becomes necessary to make counter pressure against the edges of the os uteri every pain, till it be fully dilated, which in most cases will be accomplished in the course of an hour or little more.

After this preliminary process has been completed, the practice must be varied according to circumstances. If the head be felt to be exactly in the natural position, that is, with the vertex presenting, it may be concluded either that the infant is of an unusual magnitude, or that there is a slight narrowness of the pelvis, and in either case the effectual means of giving relief is, during the pain, to press up that band of the uterus which is between the head and the pubes. When that is effected, the band next the sacrum is next to be pressed upon, and whenever it yields, the difficulty is overcome, the infant rapidly advancing.

Malposition of the infant's head occasionally proves the cause of this obstacle to delivery, and the most ordinary malposition is, the face turning towards the pubes, instead of passing along the sacro iliac synchondrosis on either side.

The late Dr John Clarke, who deservedly attained high eminence in the profession, in-

serted in the 2d volume of the Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, page 229, Observations on the Management of Cases in which the face of the child presents towards the os pubis, dated April 3, 1798. In this communication, he states that, “ in thirteen out of fourteen cases where he found the face turned towards the groin, by making pressure upon the side of the head, the occiput in the space of a few minutes was brought to the groin from the sacro iliac joint of the same side ;” he adds, that “ the consequence was, that instead of the face, the occiput was borne towards the pubis, and thus considerable pain and difficulty were avoided.”

It is unfortunate that Dr Clarke has expressed himself so vaguely, for he has not stated at what period of the labour this assistance was given. If the face be towards the groin, as he has described, and the occiput towards the sacro iliac synchondrosis, the anterior fontanelle of the infant, must be the presenting part,

and nevertheless the long diameter of the head must be in the direction of the widest part of the pelvis, although occupying more room than when the vertex presents. But if there be no band of the uterus interposed between the infant and the bones of the pelvis, there can be no resistance to the advance of the infant, till it come in contact with the coccygæi muscles and sacro sciatic ligaments. There is then certainly a risk that the face be turned towards the pubis, if the practitioner have not sufficient intelligence to make strong pressure upon the brow, which is generally sufficient, in the course of a few pains, to turn the face into the hollow of the sacrum.

But Dr Clarke's practice does not apply to the cases for which he has recommended it. He himself says, " Cases in which the face of the child presents towards the os pubis ;" but the cases described in his communication are specifically stated to be cases where " the face was towards the groin," and not to the pubis.

What the author means by malposition of the head of the infant, the face being towards the pubis, and a band of the uterus interposed between the infant and the bones of the pelvis, is, where the brow of the infant is in actual contact with the symphysis of the pubis. In those cases the more the infant is advanced, the greater must be the difficulty, because the long diameter of the child's head, must be more and more wedged within the narrow diameter of the cavity of the pelvis. It is quite evident, therefore, that if the face can be turned to either groin, the infant will be immediately accommodated to the aperture through which it should pass, and the injurious pressure upon the band of the uterus thereby removed ; and, generally speaking, this may be accomplished by suitable counter pressure. During the interval of the pain, the head is to be steadily pressed upon so as to disengage it, and when the pain recurs, the parietal bone on either side is to be strongly pressed upon, so as to turn the face towards the groin. When this is accomplished, it will, in the majority of cases, be

found, if the woman have already had a family, that the head is so loose in the passage, that by a continuance of counter pressure, the face may be brought into the direction of the sacro iliac synchondrosis, and the whole difficulty will be thus overcome.*

* In cases where it is found, that after the completion of the first stage of labour, the face of the infant presses upon the symphysis pubis, there are two modes of practice to be adopted, viz., to press the brow upwards during each pain, so as to bring the occiput to fill the posterior part of the pelvis, or during the interval of the pain to press the face towards one side of the pelvis, to accomplish which, the head must be first pressed gently a little upwards. The former practice will be found successful where the pains are strong and forcing, especially where the patient has already had a family. The latter practice is applicable where the pains are not strong, and where it is the woman's first pregnancy.

ON THE MANAGEMENT OF THE SECOND STAGE OF NATURAL LABOUR.*

When the author admits, that in the general principles on which the treatment of the second stage of natural labour is conducted by British practitioners, he has little deviation from the established practice to propose, it may seem inconsistent with his professed object in this publication, to offer any remarks on the subject.

But he has long been convinced that the de-

* By natural labour, the author means all cases where the head of the infant is forced foremost, and where the labour is completed within twenty-four hours from its actual commencement with safety to the mother and infant. This is the fair definition of natural labour, notwithstanding the objections of Professor Davis, for the term ought to be made applicable to the ordinary cases which occur, and accordingly it comprehends nine cases out of ten of every labour, at least, where ordinary attention is paid.

tails on the treatment of this stage of natural labour are still imperfectly understood, not only upon the Continent, but in Great Britain and Ireland ; and he could adduce in evidence, if required, the numerous cases of mechanical injury, notwithstanding the labour having been natural, on which he has been annually consulted for a great number of years. He deems it, therefore, incumbent upon him, to give an account of the practice which he thinks ought to be pursued in conducting the second stage of natural labour.

When the os uteri is sufficiently dilated to warrant the expectation, that the first stage shall be completed within a few pains, the patient is to be placed in the proper posture (in bed on the left side, with her knees drawn up and her body bent forward), and the practitioner is to watch for the pain which partially protrudes the head through the os uteri, that he may examine carefully whether any part of the infant, such as a hand, or a portion of the navel string, be passing down along with the head, or

whether a band of the uterus be intercepted between the infant and the pubes. Happily these occurrences are rare, but the author has seen every year cases where inattention to this rule had proved fatal to the infant, and injurious to the mother.

If the navel string or hand of the infant, or a portion of the uterus at the anterior part of the pelvis be coming down along with the head, it is quite easy, by counter pressure with two fingers, during a few pains, to secure the head clearing the uterus, and descending alone into the cavity of the pelvis.

It is a generally received precept among the profession, that whenever the head begins to press upon the perinæum, the assistance of the practitioner is required to prevent laceration, and it is well known that this is chiefly necessary where it is the patient's first child. The directions, however, for this purpose, both by British and by Foreign practitioners, seem to the author to be most unsatisfactory. Thus

Dr Denman gives the following directions, page 395, vol. i.

“ But it will generally be sufficient for the practitioner to resist the progress of the head of the child during the time of a pain, by placing upon it the fingers and thumb of the right hand, so formed that they may bear upon many points ; or to apply the palms of one or both of the thumbs (hands ?) in such a manner that they shall at the same time support the *fourchette*, or thin edge of the perinæum. But in first children, when, from the vehemence of the patient, and the rigid state of the parts, there is great reason to apprehend a laceration of the perinæum, then, occasionally calling in the other means to our aid, we shall be able to give the most powerful and effectual support, by applying the palm of the left hand, covered with a soft cloth, over the whole temporary and natural perinæum, and the right hand employed, as was before mentioned, with a force sufficiently firm to resist the exertions of the patient during the violence of the pain. In

this way we are to proceed till the parts are sufficiently dilated, when the head may be permitted to slide through them in the slowest and gentlest manner; and we are never to quit our attention till it is perfectly cleared of the perinæum. Should there be any delay or awkwardness when the perinæum slides over the face, the fore finger of the right hand must be passed under its lateral edge, by which it may be cleared of the chin before the support given by the left hand is withdrawn. When the pains are exceedingly strong, and the patient restless in her efforts, the head will sometimes be expelled with wonderful velocity, in opposition to all the resistance we are able to make; but by this calm and steady proceeding, we may be assured that we shall, under all circumstances, wholly prevent, or greatly lessen all the evils to which she would have been liable, if our conduct had been different.

“ It is necessary to observe, that these attempts to prevent the laceration of the perinæum produce some effect upon the head of

the child, and upon the parts of the mother. In the application, therefore, of the resisting force, we must not only be careful that the position of the patient is proper, and such as will allow us to act with advantage, but that we do not make any injurious or partial pressure ; because, if a partial support be given to the perinæum, the head of the child is projected against an unsupported part, and the danger of a laceration is increased. The support must be equally applied, and uniformly exerted ; and then there will be no greater prejudice done, than what might be occasioned by the rigidity of the parts."

Theoretically, those directions are most plausible, and indeed are unexceptionable, but when followed in practice, they must disappoint the expectations of the practitioner in two respects. *Firstly*, That if there be a soft cloth interposed between the perinæum and the hand of the practitioner, it is impossible to give that efficient support to the parts on the stretch which Dr Denman inculcates ; and,

Secondly, If the right hand be employed in retarding the advance of the infant every pain, while the left hand is applied to support the perinæum, there are not many practitioners who could undergo this fatigue in cases of a first labour. In this part of the kingdom, the perinæum requires to be supported in such cases from two to five hours and upwards.

There is another objection to Dr Denman's practice, viz., that he has suggested no other means than counter pressure for alleviating the sufferings of the poor woman during this period of the labour.

Professor Davis, in the work already quoted, (page 964,) gives the following directions on this subject.

“ If this fact be admitted, the proper assistance to be extended in such cases should be founded on the principle of counteracting the dangerous violence of the uterine throes, and of preventing the perinæum from being

exposed to the full amount of their impulse. This is to be done by opposing a firm and steady bearing to the head when felt to be borne down too strongly against the perinæum, and to be impelled by a *vis a tergo* disproportionate to our experience of the ordinary efforts of nature. In the performance of this duty, we accomplish our object most effectually, not by applying the palm of the hand to the perineal tumour, as erroneously directed by some writers ; but more directly and dexterously by opposing the whole of our modifying and resisting force, by the application of the points of the fingers and thumb of the right hand to the presenting part of the foetal head. 'The danger of rupture arises not from any extraordinary bulk of the head, as is very often supposed, but generally, without a doubt, if not always, from the suddenness and violence of the impulse which it makes against the perinæum. The duty of protection, therefore, must obviously consist in opposing a moderate resisting force to the inordinate violence of the natural efforts ; or in other words, in com-

pling nature to observe those rules of caution and slow progressiveness on which she would seem to have founded her ordinary security.

“ In some few cases of unfavourable position of the foetal head or of irregular form of the pelvis, it might indeed be necessary to apply the fingers of the left hand to the posterior part of the perinæum and neighbourhood of the os coccygis ; in order to guard against any sudden accident which otherwise might be there incurred. During the performance of this latter service, it is scarcely necessary to intimate, that a liberal use of napkins should be considered as indispensable.”

It is obvious that Dr Davis, in these directions, has totally overlooked two important considerations, viz., alleviating the sufferings of the patient, and taking means to assist the dilatation of the passages.

Professor Burns has detailed, better than any other British author, the exact method of

supporting the perinæum in ordinary cases, and yet he has committed the same omissions as Dr Denman and Dr Davis, with an additional mistake, which may, however, be an error of the press.

His directions are these, (page 366, eighth edition.)—"A soft cloth is to be laid on the perinæum, and when the second stage of labour is drawing to a conclusion, the hand is to be placed on this, in order to prevent the too rapid delivery of the head, and the consequent laceration of the perinæum." "We may decidedly say, that the perinæum is torn in consequence of distension; but in every delivery the perinæum must be distended, and in some to a great degree. In proportion to the facility of the distension, and the ease with which the orifice of the vagina dilates, is the risk of laceration diminished. It has, therefore, become a practical rule to resist, with the hand placed on the perinæum, the delivery of the head, until the parts be sufficiently relaxed; and this pressure ought to be exerted

over the whole tumour, but especially at the *fourchette* ; for, although the perinæum have been perforated by the head, which did not pass through the orifice of the vagina, but through it, yet, usually, the rent begins at the *fourchette*, and proceeds backwards, to a greater or less degree. In every case, the *fourchette*, often, a small part of the posterior surface of the vagina, is lacerated, though the integuments of the perinæum remain sound. By firmly supporting the perinæum, and, at the same time, exhorting the patient not to force down, during a pain, and thus retarding the delivery of the head, until we feel the vulva, as well as the perinæum relaxing, we may generally prevent laceration ; and therefore, this accident shall seldom, if ever, happen in the hands of a prudent practitioner. Still, it is possible, for the perinæum to be torn, under good management. A little bit of it is not unfrequently lacerated, notwithstanding all our precaution ; and although, in this slight degree, it be of no consequence, yet, we thus see, that art cannot, completely, prevent the accident.

Sometimes, the restlessness of the patient, almost inevitably, prevents the necessary precautions from being used ; and it may happen, that the frame is so very irritable, that the perinæum, unexpectedly, lacerates, at the time when it is supposed, to be in a favourable state. As there must be some point, where the resistance ought to stop, else the labour should be unnecessarily protracted, or perhaps even the uterus injured, it is possible that such resistance may be made, as generally is sufficient, to prevent the accident, but, which may not, in some particular case, owing to the irritable state of the perinæum, be adequate to the intended purpose ; or, the power of the uterus may be so strong, as to expel the head, in spite of every allowable resistance ; and, in some of these cases, it is possible, for the perinæum to be torn.

“ It is not sufficient, that the practitioner support the perinæum, until the head is going to be expelled ; he must continue to do so, whilst it is passing out, for there is then a great strain on the part, as the forehead is pass-

ing over the perinæum ; even the face or chin, moving along it, may produce injury. He ought, not only, steadily, to support the perinæum, with the whole hand, but have that, so placed, that the thumb, fore finger, and their junction, shall form an arch, embracing the margin, of the perinæum and distended labia, and sustaining the head, as it projects. The perinæum, is to be, as it were, guided, and at the same time supported, backward, over the head and face, that it do not lacerate. After the head is delivered, it is still necessary to place the hand under the chin, and on the perinæum, for the arm of the child comes, next, to press against this part, and may either tear it by pressure, or by coming out with a jerk. Farther, to prevent injury, and avoid pain, the body of the child, should be allowed to pass out, in a direction, corresponding to the outlet of the pelvis, that is to say, moving a little forward."

In the above directions, Professor Burns advises that the perinæum should be supported

backward over the head and face of the infant, but he surely meant forward.

As to the foreign practice, at least that adopted in France, where midwifery is considered on the Continent to be better understood than in any other Continental state, the position in which patients are placed during labour, seems to the author very ill calculated to enable the practitioner to give proper assistance during the progress of the infant through the external passages, and accordingly, it is evident, from the admission of almost all foreign authors, that laceration of the perinæum is a common occurrence upon the Continent.

Baudelocque, paragraph 822, says, (vol. i., page 418,)—"When the child's head begins to press against the external parts, it is sometimes proper to prepare them, that they may not be injured in the last moments. Besides fat substances, such as lard, &c., which we are to apply often, we may introduce two fingers into the vagina, to enlarge it by degrees, as well as

the vulva, either by separating the fingers in different directions successively, or by pressing downward against the perinæum. But this is only to be done in the interval of the pains, contenting ourselves during their action with supporting the perinæum with the palm of the hand, in order to prevent its tearing, and to hinder the head from being delivered too suddenly.

“ 823. These preparations* are never more necessary than in a first labour. If they are omitted then, we are commonly freed from the necessity of using them afterwards ; because the perinæum being torn, never unites perfectly, nor do the other parts ever recover their natural tone.

“ 824. When the posterior extremity of the head is engaged in the vulva, as in a kind of crown, if the *fourchette* is not too much dis-

* Heath's Translation of Baudelocque, p. 419.

tended, we may permit the woman to indulge her inclination to bear down ; and during that time, without however discontinuing to support the perinæum, we may favour the exit of the head, by pressing against it underneath, and near the anus of the woman, as it were to oblige it to ascend towards the mons veneris.

“ 825. The vulgar think, that at this time the accoucheur takes the child by the ears to pull it towards him. If it is ridiculous to believe it, it would be much more so to propose it, as has been done on another occasion. It would not answer any better to attempt to insinuate the hands on each side the head, in order to grasp it ; or to introduce the fingers into the anus of the woman, to press it from behind forward, and force it out.

“ 826. The head being almost delivered, we finish its disengagement by raising it more and more towards the pubes ; or by insinuating one of the fore fingers under one of the sides of the lower jaw.”

Gardien says, (vol. ii. page 287,)—"The more certain method of preventing the laceration of the perinæum, is that which was suggested by Puzos, and has been adopted by Smellie and Baudelocque, viz., supporting the perinæum till the external passages are sufficiently dilated to permit the exit of the infant. With this view the fingers, or the palm of the hand, are to be so applied to the *fourchette* and perinæum, as to form an inclined plane, over which the head of the infant may slide. It is necessary to avoid applying the thumb and the extremities of the fingers to the labia, because this would impede the dilatation of the passages. For the further purpose of preventing the laceration of the perinæum, the thighs are to be moderately bent upwards and separated, for if they were very much drawn up and separated, the perinæum would be put greatly upon the stretch, which would oppose the progress of the infant. During every pain, while the perinæum is pressed up towards the pubes, such pressure is to be made upon the anus as to force the head of the infant towards the arch

of the pubes, thus favouring the natural progress of the infant's head." Mons. Gardien adds, that " he has found it highly conducive to the safety of the perinæum, when the infant's head is partly expelled, to press down the occiput, by the application of the fingers towards the arch of the pubes, or to insinuate the fore fingers of the hand which supports the perinæum, underneath the lower jaw of the infant."

The directions of Mons. Vâlpeaux (vol. ii. page 568) upon this subject, are expressed in language too indelicate to bear a literal translation, and therefore the original is given in a note.*

* " Quoi qu'il en soit, la conduite avouée par l'expérience et le raisonnement est la suivante : on place la main nue ou, mieux, enveloppée d'un linge, en travers, de manière que son bord cubital corresponde à la pointe du coccyx, que son bord radial soit au-dessous de la commissure antérieure du périnée, que l'extrémité libre des doigts puisse se loger entre la grande lèvre et la cuisse d'un côté, ou s'étendre jusque sur la fesse, tandis que le thénar et le pouce

The method which the author has pursued,

écartés se trouvent entre l'autre lèvre et la cuisse du côté opposé. On transforme ainsi en paroi solide le plan incliné que doit parcourir la tête sur les parties molles en sortant du bassin ; la main est là comme pour continuer la face concave du sacrum et du coccyx, afin de forcer la tête à se mettre en rapport avec l'axe de la vulve ; l'effort que l'on exerce doit donc agir d'arrière en avant, du coccyx vers le pudendum et non dans le sens inverse ni latéralement. Il faut obliger l'occiput à se relever vers les pubis et non l'empêcher de descendre ; ce n'est d'ailleurs qu'au moment même où la tête commence à distendre la vulve avec une certaine force qu'il importe d'agir ; avant cette époque l'opération n'aurait aucun but, et l'accoucheur prouverait seulement qu'il n'en comprend pas le mécanisme. En essayant de flechir un peu les doigts, comme on l'a conseillé pour ramener les parties molles vers la ligne médiane, la main devient trop concave, ne soutient plus suffisamment la tête, et l'on favorise précisément ce que l'on voudrait éviter ; en plaçant la main, comme d'autres le recommandent, en supination, verticalement, les doigts vers le coccyx et le poignet du côté de la vulve, on manque encore le but, parce que les efforts s'exercent alors avec plus de facilité en avant qu'en arrière, tandis qu'on doit désirer le contraire. Enfin, pour prévenir le plus sûrement possible la déchirure, on peut, à l'instar de M. Flamant, saisir la peau des fesses ou de la portion postérieure du bassin avec les deux mains, afin de la ramener autant que possible, en avant ; il convient, il import même, aussitôt que les bosses pariétales ont franchi le niveau des tubérosités ischiatiques,

and recommended for the last forty years, in cases of a first child is the following.

From the time that the head of the infant clears the os uteri, the practitioner is to remain by the patient, and whenever the pressure upon the external parts begins, he is to make counter pressure every pain, by applying the right hand, without the interposition of a cloth, in such a manner as to support any part which is more than another on the stretch. In the intervals between the pains, he is to apply fine lard to the perinæum and labia, in proportion to the heat or rigidity of those parts.

As the orifice of the vagina opens, and a

d'engager la femme à ménager ses efforts, au lieu de l'exciter à pousser de plus en plus, comme on le fait trop généralement. C'est dans cet instant que les parties surprises, étonnées, se déchirent, si la tête poussée trop rapidement, ne leur donne pas le temps de céder et de mouler sur elle. Donc plus la vulve sera lentement traversée, plus on aura de chances de maintenir la cloison périnéale dans toute son intégrité."

little more of the infant's head than the swelled scalp is pressed through the orifice during the pain, he is so to arrange the thumb and fingers of his right hand on each side of the vulva, as to secure due support to those parts, while with the palm of his hand he is to press forward the perinæum towards the pubes. If the head be large, and the parts yielding slowly, he is enabled, by this mode of applying the thumb and fingers, to retard the progress of the infant's head, as well as to support the parts with which it is forced into contact. The patient should at this period of the labour be urgently requested to bear down as little as possible.

The practice thus suggested is so different in several particulars from that generally pursued, that the author feels it incumbent upon him to explain what he is led to believe its superiority.

Firstly, He advises (what he has uniformly practised), that from the time the infant's

head is forced down upon the external parts, the practitioner should sit down to give assistance during the pains, and should on no account leave the patient for one moment. He is aware that this must upon many occasions impose a very fatiguing, and even painful, duty on the practitioner, but experience has convinced him, that in many cases, the life of the infant and the safety of the mother depend upon the adoption of this rule. Thus, while the practitioner sits by and gives his assistance during every pain, his patient's spirits are kept up, as she expects that her sufferings are soon to be relieved, and although a prudent practitioner does not hold out this promise, the belief is strongly impressed upon her mind.

Cases do sometimes occur, where, after the infant comes to press on the perinæum, the impatience or the fear of the sufferer becomes such, that a suspension or diminution of the uterine contractions takes place, and it might seem allowable for the practitioner to recruit his strength, by change of posture or by taking some

refreshment. The consequences, however, of such indulgence, would certainly not unfrequently be most prejudicial. From the patient dreading a great protraction of her sufferings, the labour pains might cease altogether, and a labour that should have terminated naturally, might become fatal to the infant from the continued compression of the cord by the contracted uterus, and hazardous to the mother from the interrupted circulation through the linings of the pelvis. It is moreover possible, though not very probable in a first child, that while the practitioner is in another room taking refreshment, a strong long continued labour throe might expel the infant at the expense of the laceration of the passages.

Secondly, In his method of supporting the perinæum, the first deviation from the ordinary practice, is giving support with the naked hand, and it is scarcely necessary to offer any arguments in favour of this practice, after what has been already stated. It is obviously impossible to afford the proper support if there be a cloth

(however soft) interposed between the hand and the parts.

Thirdly, During the intervals of the pains, the author recommends the application of fine lard to the parts pressed upon by the head of the infant. Three advantages result from this practice, which seems to be at present little appreciated by the profession.* For, in the first place, the application of the lard in all cases of a first labour in this part of the world, tends greatly to relieve the sufferings of the poor woman. Secondly, There can be no doubt whatever, that if judiciously employed, it contributes greatly to the dilatation of the passages ; and, Thirdly, a still more important effect is produced by this practice, viz., the prevention of swelling and inflammation of the vulva after delivery. The author can solemnly aver, that no patient of whom he has had charge, for at least thirty years past, has had any such

* Burns, eighth edition, page 365.

consequence of labour, although he has often had occasion to make counter pressure upon the perinæum for from five to nine hours.

Fourthly, In supporting the external passage, while every pain partially protrudes the head of the infant, the author advises the perinæum to be forced forwards towards the pubes, a method which he has followed for above forty years. By this practice the stretching of the perinæum is lessened, while the dilatation of the orifice of the vagina is facilitated.

Theoretical principles have led some of the latest French authors to recommend this practice,* but the position of the patient while in labour, in France, renders it impossible to attain this object, even although the practitioner follow the method advised by Valpeaux, that of taking hold of the buttocks with the two hands and pressing the parts forward.†

* *Vide* Valpeaux, vol. ii., page 568. † *Ibid.* 569.

It is well known that after a woman has once born an infant, her sufferings are comparatively trifling in subsequent labours, after the head comes in contact with the perinæum, if the infant be of the ordinary size and in the natural position. In such cases, it is even more imperative upon the practitioner to remain by the bed side of the patient, from the moment that the head clears the uterus. Instances have occurred where the perinæum has been burst in consequence of the practitioner having withdrawn his hand during the interval of a pain, and on the occurrence of a strong uterine contraction, having so passed his hand through the bed clothes, as not to bring it in contact with the perinæum in proper time.

Unless where the head of the infant is very large, or in a malposition, or there has been a long interval between the pregnancies of the patient, there is not the same necessity for the use of the lard as in a first labour, in which the author very often has occasion to use a whole pound of that substance. But the same support, by

means of the hand, is to be carefully adopted in every case of natural labour.

When the head is born, the practitioner is to examine carefully whether there be any loop of the cord round the infant's neck, that it may be speedily disentangled, and he is to wait for another uterine contraction by which the shoulders are to be accommodated, and the person of the infant to be expelled. While waiting for this, the access of air to the face of the infant is to be admitted, on which breathing generally commences, evinced by an imperfect cry. When the pain comes on, the perinæum is to be supported with the left hand, and with the right the side of the infant is to be bent up towards the pubes. It is very seldom necessary to introduce the finger into one of the armpits.

In a natural labour the infant gives a loud scream when completely born, which establishes its new mode of living, and when this happens, the cord may be safely tied and cut, but before

doing this, the state of the abdominal parietes and of the uterus should be carefully ascertained, in order to determine whether there be another infant in utero.

ON THE MANAGEMENT OF THE THIRD STAGE OF LABOUR.

It may be unnecessary to remark, that by the third stage of labour is meant the separation and expulsion of the placenta and membranes, an operation effected in natural labour by the same simple means which had opened the passages, and had propelled the infant, viz. the contractions of the uterus.

After the birth of the infant (in natural labour) there is generally a suspension of uterine contractions for some time, varying from ten minutes to half-an-hour, during which the portion of the navel-string left adhering to the placenta, on detaching the infant, remains unchanged. By and by, the patient complains of a griping or grinding pain, and on taking hold of the cord, it will be found distended with blood (provided a ligature had been tied

round it) and to have become lengthened. These circumstances generally indicate the separation of the placenta from the surface of the uterus, and warrant the aid of the practitioner.

But before attempting to draw down the navel-string with this view, the practitioner must be quite certain that an actual separation has taken place, and for this purpose he is to carry up two fingers of the right hand along the cord at the anterior part of the pelvis, and if he do not easily reach its root, he is to conclude that it is still attached to the uterine surface, and that his assistance is not yet necessary.

The reason for this precaution can scarcely be misunderstood. If the cord be pulled by, while the placenta still adheres, that portion of the uterus not in contact with the sides of the pelvis may be more or less inverted, of which many deplorable instances might be cited.

On the supposition that the result of the examination is a conviction that the secundines are detached, the cord is to be twisted round the fingers of the right hand, and to be gently but steadily drawn down, favouring the direction of the vagina till the placenta be brought in contact with the external parts. It is then to be drawn gently upwards, the left hand being applied to support the perinæum, and when it is partially protruded, it is to be grasped by the right hand, and bent up towards the pubes, taking care to draw forward the membranes, which are generally inverted over its lobulated surface. The French practice, that of twisting round the placenta four or five turns after its protrusion, will be found far less efficacious in securing the extraction of the membranes than the method thus suggested.

Now and then it happens that the placenta is so large, that, after being separated from the uterus, it does not readily pass into the vagina. In such cases it becomes necessary to press, with two fingers of the left hand, the navel-string

towards the apex of the sacrum, while with the right hand the cord is drawn forwards towards the pubes. This practice, however, is seldom required, although, by the writings of Baudelocque, Capuron, Gardien, Valpeau and other French authors, it seems to be very indiscriminately had recourse to on the Continent.

As cases occasionally occur where the placenta is not separated within the ordinary time after the birth of the infant, an important question has been agitated, viz., how long it may be proper to wait for the efforts of nature, provided no untoward circumstances occur, for both British and foreign practitioners cordially agree, that if hæmorrhagy, or syncope, or convulsions supervene, not a moment's delay in extracting the secundines is justifiable.

On a practical subject of this importance, it must appear extraordinary that there should be still so much discrepancy of opinion among practitioners of the first respectability. Dr Denman has expressed himself on this subject

in the following terms (page 326, vol. ii.)—
“ We will say, leaving the matter at large for the exercise of individual judgment, that if the placenta be not expelled at the end of four hours from the birth of the child, it is generally wise to determine upon extracting it,—and the determination of choosing that time is, I believe, to be founded on the opinion that the parts have not closed since the expulsion of the child. I can, however, recollect many examples of a retained placenta, without a hæmorrhage, to which I have been called at any time within twelve or even twenty-four hours after the birth of the child, in which the placenta has been very easily managed, when the exigencies of any case required it.

“ In this place it is necessary to make another distinction. Though the placenta may be retained for many hours after the birth of the child, if we be convinced of some degree of descent, especially if we can feel that part of it into which the funis is inserted, we have no occasion to be alarmed, or to hurry its exclu-

sion, unless there be an existing hæmorrhage. Then the placenta may be suffered to remain till it is excluded by the action of the uterus, or as it descends, the most gentle assistance may be given by pulling by the funis to extract it, without any apprehension of danger, whether it be detained two or even twenty-four hours, because we have at all times, under such circumstances, an easy and certain command of it."

These observations of Dr Denman seem to be founded on erroneous principles, and to be calculated to mislead young practitioners. To the author, indeed, they are intelligible, for he apprehends that they contain internal and unequivocal evidence that the cases where Dr Denman supposed the placenta to have been retained, with impunity, for many hours within the cavity of the uterus, after the expulsion of the infant, were in reality cases where it had been retained in the vagina. He expressly says,—“ If the placenta be not expelled at the end of four hours from the birth of the child,

it is generally wise to determine upon extracting it ; and the determination of choosing that time is, I believe, to be founded on the opinion, that the parts have not closed since the expulsion of the child. I can, however, recollect many examples of a retained placenta without a hæmorrhage, to which I have been called, at any time within twelve, or even twenty-four hours after the birth of the child, in which the placenta has been very easily managed."

It is impossible to put any other interpretation upon those expressions, than that they relate exclusively, to cases of retention of the placenta within the vagina ; for it is an undoubted fact, that when it is within the cavity of the uterus, the external parts and vagina contract so quickly, that even at the end of one hour after the birth of the infant, the vulva seems closed and the vagina feels thickened, and as time advances, those changes progress. But when the placenta fills the vagina, this process is necessarily suspended.

That the after-birth may be retained in the uterus for many hours without hæmorrhagy ensuing, the author well knows ; but in all such cases, decomposition of its substance, to a greater or less degree, takes place, and proves, as has been admitted by Dr Denman himself, and by the profession at large, a source of great danger.

On the other hand, the retention of the placenta within the vagina for many hours after the expulsion of the infant, is not necessarily productive of the same injurious effects, for an obvious reason. Its lobulated surface is covered by the membranes of the ovum, which, precluding the access of atmospherical air, prevents any speedy decomposition, while the absorbents of the vagina are infinitely less numerous than those of the uterus.

Dr Osborne, who for many years was a joint lecturer with Dr Denman, and who deservedly attained high eminence in the profession, seems to have entertained a different opinion upon

this subject, from his respected colleague, for he expressly says,*—“ Under no circumstances whatever ought the placenta to be permitted to remain in the uterus for any considerable length of time after the birth of the child.” He has unfortunately not specified how long it may be safe to wait for the natural efforts.

It appears, from the observations of all the late French authors on midwifery, that there is no precise rule adopted on this subject by the Continental practitioners. They all agree, that if symptoms of danger occur, the interposition of art becomes necessary, but the very circumstances which they enumerate as denoting danger and warranting interference, mark that they wait too long for the exertion of the natural powers. Indeed some of the most respectable foreign authors actually inculcate delay, in the extraction of the placenta, under circumstances which, in the author's opinion,

* Essays on the Practice of Midwifery, &c., page 38.

require its immediate extraction. Thus, Baudelocque says (paragraph 928),—"If atony of the uterus, when accompanied with violent flooding, requires the instant extraction of the placenta, a very different practice should be pursued where there is no such symptom. If there be no hæmorrhagy, no attempt should be made to separate the placenta, till the uterus recover its tone and contract naturally." Capuron says (page 331),—"When the placenta is retained by inaction of the uterus, or by the spasmodic contraction of its neck, or by morbid adhesion, any attempt at extraction should be delayed." And Mons. Gardien says (page 223, vol. iii.)—"The placenta should not be interfered with in cases where it is retained by a spasmodic or natural contraction of the neck of the uterus, nor in cases of plurality of children."

From the earliest period of the author's professional life, he was taught to adopt two rules in respect to the management of the placenta, viz., to interfere upon the very first threatening

of hæmorrhagy, and, where there were no untoward symptoms, to wait no longer than one hour for the natural efforts. Every year's experience has strongly impressed his mind with the utility of those precepts.

With respect to the former of these rules, it seems to be duly appreciated by foreign practitioners, but many cases have fallen under the author's observation, and many communications have been made to him, which lead him to suspect that British practitioners, from their unwillingness to hurt the feelings of their patients by an appearance of officiousness, are often tempted to delay interference in those cases till the symptoms become urgent. This unwillingness to pursue active treatment may be readily explained. In some cases there is merely a trickling of blood, in other cases now and then there is a gush, or the discharge of a coagulum, and as no alarming symptom follows, the practitioner does not think himself warranted to take decided measures, being in momentary expectation that the contraction of the uterus

will come on and expel the secundines. Thus time passes, and occasionally the anxious hope of the practitioner is fulfilled, the natural powers of the constitution completing the delivery. But it not unfrequently happens, that alarming symptoms suddenly supervene, and that the tardy assistance of the practitioner proves to be unavailing.

It cannot, therefore, be too deeply impressed upon the mind of every person engaged in the practice of midwifery, that the effect of the loss of blood after the birth of the infant, whatever may be its quantity, must always be uncertain,—and that it may rapidly sink the living powers in some individuals, while in others it may give such a shock to the constitution, as shall occasion a broken state of health.

From these remarks, it is not to be inferred that the author alleges that in every case loss of blood after the birth of the infant is a dangerous occurrence; for, on the contrary,

he believes that it is often a salutary effort of nature to relieve the system, or to unload the uterine vessels. But it is to be recollected that such a discharge should be under the control of the practitioner, which it cannot be as long as the placenta is retained in the uterus.

It is on the latter precept that there is so much difference of opinion among the profession. If there be no untoward symptoms, it has been a general conclusion among British practitioners, that time and patience are all that are required. Dr Ramsbotham (part i., page 142) says,—“ The practice, in cases of retention of the placenta must be guided by future occurrences, not by present suspicions. We therefore wait in patient hope of the natural exclusion, until we are urged to the manual removal by time or danger.”

Professor Davis expressly says, that “ many cases are met with of retention of the placenta without hæmorrhagy, which terminate very satisfactorily in two or three hours, by a spon-

taneous expulsion of it, independently of any interference whatever.”—(Page 1061.)

It has been already stated, that the Continental practitioners held it to be their duty to delay the extractions of the placenta if there be no untoward symptoms.

On what principle, then, it may be asked, did the author, at a very early period of his professional life, adopt the rule of waiting no longer than an hour in any case (after the birth of the infant) before proceeding to extract the placenta. He answers, that it was from a conviction that the introduction of the hand after that time must tend to excite inflammation of the passages in consequence of the contraction and other important changes which follow the expulsion of the infant.*

* On this practical question he has much satisfaction in referring to the authority of Professor Burns of Glasgow, who has been led to the same conclusion. In the first edi-

When, therefore, the secundines are thus retained, it becomes necessary to interfere, and the first object should be, to ascertain whether they be retained within the uterus or within the vagina. The certain method by which this can be decided has been already explained, page 266.

Three different circumstances may occasion this retention, viz.,—Atony of the uterus ; irregular contraction of the same ; and morbid adhesion of the placentary mass.

Atony of the uterus, retaining the placenta, is distinguished by several characteristic marks, such as, the uterus when felt through the parietes of the abdomen, communicating the idea of a large flattened sac, instead of a sphe-

tion of his valuable work, entitled *Principles of Midwifery*, page 212, he recommended waiting for an hour and a half before proceeding to the extraction of the placenta ; but in his second edition, page 287, and in his subsequent editions, he has restricted the time to one hour.

roidal body like an infant's head, the portion of the cord left adhering not lengthening, and there being no griping nor grinding pains. This state of the uterus is very seldom accompanied with hæmorrhagy, although foreign authors entertain a contrary opinion, and it is always to be attributed to some mismanagement of the first or second stage of labour.

The appropriate practice in this case is, to excite the contraction of the uterus. This is best done by the exhibition of a cordial ; the application of heat to the lower part of the belly ; and pressure upon the uterus by means of the hand. Occasional tugging at the navel-string is a common practice, but it is a hazardous one, and should not be sanctioned.

If the contraction of the uterus be not secured by the employment of these means within an hour after the birth of the infant, a stimulant enema ought to be administered, and should that fail, the manual separation becomes indispensable.

As to the second cause of retention of the placenta within the uterus, what British practitioners call the hour-glass contraction, and what is styled by the French, *Le Chatonnement*, both Dr Denman and Dr Ramsbotham seem to have supposed that there are no marks by which this cause of retention could be ascertained. Thus, Dr Denman (page 332, vol. ii.) says,—“There is no way of judging of this kind or degree of contraction, unless by the uncertain information we may acquire, by the application of the hand to the abdomen, till we introduce our hand into the uterus.” Dr Ramsbotham says (part i., page 148),—“The occurrence of this symptom (*viz.*, uterine hæmorrhagy), the elongation of the uterine tumour, and the impossibility of feeling the placenta, point out pretty clearly the nature of the case. Strong after-pains sometimes make their appearance but they prove of no avail towards the exclusion of the placenta. After a farther suspense, the abstraction of the placenta is found advisable, and indeed necessary to the safety of the patient. When the hand

is introduced for this purpose, the cause of the detention is discovered."

In every case of hour-glass contraction which has fallen under the author's notice, the symptoms have been strongly characteristic, and were the following. *Firstly*, Although uterine contractions had followed the birth of the infant, there was no lengthening of the cord. *Secondly*, On feeling the uterus through the parietes of the abdomen, instead of its shape being spheroidal like the head of an infant, it felt like two rounded bodies joined together, the one placed above the pubes, and the other reaching from the upper part of the former to near the navel. *Thirdly*, On pulling gently by the cord, it readily came down, but on being let go it receded with a jerk. He has seldom found this cause of retention complicated with hæmorrhage, but he believes that, if timely assistance be not given, that symptom supervenes.

The hour-glass contraction is always the

effect of mismanagement. If the first stage be unusually protracted, this state of the uterus follows delivery, as was exemplified in the case of the Princess Charlotte. But upon the Continent there is an additional cause of this untoward occurrence, viz., the established rule of extracting the infant the moment the head is protruded, without waiting for the action of the uterus, to expel its person.

For the purpose of remedying this cause of retention, an opiate enema should be first administered (provided there be no hæmorrhagy), and after half an hour, the practitioner should proceed to introduce his hand, guided by the cord, to overcome the constriction, to separate the placenta, and to secure the regular contraction of the uterus.

Retention of the placenta from the third cause, viz., morbid adhesion to the uterine surface, is the most frequent case which has fallen under the author's notice. Indeed, he can truly say, that for the last thirty years it

is the only case of deviation from the ordinary progress of the third stage of labour, which he has met with, where he had the charge of the patient from the beginning, and it appears to him that many of the cases, in which Capuron, Gardien, and other foreign authors attribute the retention to inert action of the uterus, had been in reality instances of morbid adhesion of the placenta.

The symptoms denoting this case of difficulty are, in the author's opinion, well marked, and yet they have not been specified by Dr Denman nor Professor Davis ; and Dr Ramsbotham has averred, that there are no such symptoms. He says (page 74, part i.)—" Adhesion of the placenta, to its uterine surface, is by no means an uncommon occurrence, but it can seldom be positively known until the hand is introduced for its removal."

Where the placenta morbidly adheres, a gush of blood follows the birth of the infant, uterine contractions succeed, each pain being

usually followed by another gush, while the uterus feels contracted into a round form, and yet there is no lengthening of the cord. In the whole course of the author's practice, he has only met with one case where these symptoms did not occur, and that case happened above twenty years ago.

This morbid condition of the placenta is met with in various degrees. Sometimes there is a thin film of osseous matter covering a portion of its lobulated surface. In other cases, along with induration and thickening of part of its substance, there are bony spiculæ penetrating a portion of the mass. More frequently a part of the placenta seems converted into gristle, being of a compact dense texture, and semi-transparent like melted horn. This is usually styled the schirrous placenta, and constitutes the most alarming degree of the morbid change, for it has been found after death, that the substance of the placenta has been so blended with that of the uterus, as to render it impos-

sible to separate the one from the other without destruction of texture.

Commonly this morbid change is confined to a portion of the placenta, and in no instance within the author's knowledge has it extended to the whole. It seldom occupies more than a third of the general mass, and it does not seem to influence the health of the infant. In only one case the author found that it extended to the whole circumference of the placenta to the breadth of an inch. The middle part was of the natural texture. It was in that case that no hæmorrhagy followed the birth of the infant, and that the cause of retention was not understood till the hand was introduced into the uterus.

Some individuals seem to have a peculiar tendency to this unfortunate change in the secundines. Thus, it consists with the author's knowledge, that several mothers of a large family (*viz.*, women who have had ten or twelve children) had, in the course of their

child-bearing life, incurred, three or four or five times, great danger from this circumstance.

Certainly the most remarkable case which he ever attended was that of a lady who, before marriage, having read a violent philippic against the employment of medical men in the practice of midwifery, stipulated with her husband (when she felt herself in the family way), that he should allow her to be in the utmost extremity of danger, before having recourse to the aid of any such practitioner. This lady had, in five successive deliveries, the adherent placenta, and on each of those occasions, by the time the author was called in, the pulsation at the wrists had ceased, and the danger was indeed imminent. She had a sixth child, and as the very respectable female practitioner who had hitherto attended her, declared that she would not again take the responsibility of the case, she was (very much against her own feelings) put under the author's care. It so happened, that the whole process of labour

proved on that occasion to be strictly natural.

Several of the patients who had suffered from this cause of retention of the placenta (which, by the by, is, in this part of the kingdom, popularly called the after-birth growing to the side), have alleged, that during the latter weeks of pregnancy, they had felt a dull heavy pain towards one side of the womb. If this were the case, it would afford a strong confirmation of Professor Davis's conjecture (page 1062), that the cause of this morbid adhesion is "the consequence of an inflammatory affection of the parietes of the uterus."

But the author can truly affirm, that he has met with many cases of adherent placenta where there had been no previous pain in the side; and that, on the other hand, in several cases where patients had been in much alarm in consequence of having experienced the pain alluded to, there proved to be no morbid adhesion.

These several conditions occasion considerable difference in the facility or difficulty in the management of the case. Where there is merely a thin film of osseous matter, the uterine contractions may suffice to separate the mass, but in the other degrees no effort of nature can avail.

When, therefore, the symptoms denoting adhesion unequivocally occur, the practitioner must proceed instantly to relieve the patient. For this purpose the navel-string is to be held by the left hand, while the right hand is to be carried up, guided by it to the placenta.* Pressure is now to be made upon its substance, bringing its circumference towards its centre, and detaching leisurely and carefully all that can be separated by this manipulation. The separated mass is now to be extracted by pulling by the

* Dr Ramsbotham employs for this purpose the left hand, but the author, from knowing the difficulty occasionally experienced in this operation, must enter his protest against this practice. Dr Ryan has mistaken the author's practice in this respect, alleging that he advises the left hand to be used. *Manual of Midwifery*, page 184.

navel-string, with the left hand, while the complete contraction of the uterus is to be secured by suitable pressure with the right hand, which ought not to be withdrawn from the cavity till its parietes are in close contact.

A most serious complication of this case is occasionally met with, viz., where unfortunately the navel-string has been torn from its insertion by some mismanagement. The first difficulty experienced under such circumstances, is the passing of the hand into the uterus, for the fundus is apt to be forced down into the pelvis, while the os uteri is pressed forward towards the pubes. On carrying up the right hand, therefore, there is the risk of mistaking the upper part of the vagina, towards the sacrum, for the cervix uteri, and if the practitioner be at all rash, he may, under this impression, actually force his fingers through the vagina,*

* Perhaps Dr Ramsbotham may have been led to his practice of using the left hand in extracting the placenta, from having witnessed some cases of this kind. If there

several instances of which have fallen under the author's notice.

This untoward mistake may be guarded against by directing an attendant to press firmly upon the lower part of the belly, while the operator is to carry up his hand, with its back in contact with the anterior part of the pelvis, till he get his fingers into the uterus. After overcoming this difficulty, another presents itself, viz., that of distinguishing the mass of the placenta from the substance of the uterus itself. For this purpose, the whole extent of the cavity of the uterus must be carefully examined, and it will usually be found that a small portion of the substance of the after-birth is detached, but if this be not the case, the bulging out of a part which can be pressed upon without occasioning pain, will lead to a detection of the seat of the after-birth.

be no navel-string to direct the operator to the uterus, the introduction of the left hand more immediately leads to the opening of the uterus than that of the right, supposing the woman lying on her left side.

In detaching the placenta under such circumstances, the same method as in the former case must be adopted, that is, the pressure for the purpose of separating the mass, must be made exclusively upon the foetal surface, and when all the separate portions are detached, they are to be pushed down into the vagina, after which, as in the former case, the parietes of the uterus are to be forced into contact, and any coagula or remains of the secundines are to be scooped out in the course of withdrawing the hand.

The practice thus suggested, is very different from that recommended both by British and foreign practitioners, for the mode of extracting the placenta in cases of morbid adhesion usually adopted, is to insinuate the fingers between the substance of the after-birth and the surface of the uterus.

Thus, Dr Denman gives the following directions (page 328, vol. ii.),—" We must proceed with the hand to the placenta, which may

either adhere with its whole surface, or it may be partly or even wholly separated and lying loose in the cavity of the uterus. Should there be a total adhesion, we must search for the edge of the placenta, on the outside of the membranes, cautiously distinguishing between the placenta and the uterus. When the edge of the placenta is raised, the further separation must be made with the blunt ends of the fingers, and the closer and firmer the adhesion, the slower the separation ought to be made, not proceeding rashly or affecting dexterity, but giving our heads time to guide our hands, as if the operation were performed under inspection. By slow proceeding, and by demurring a short time if we meet with more than ordinary difficulty, the separation will be perfected; or, when the greater portion is loosened, if we grasp it slightly in the hand, and bend it backwards, the remaining part will often peel from the uterus without trouble, but this requires much caution. Should the placenta be found partly separated, we must proceed in the same manner."

From several expressions in Dr Ramsbotham's valuable practical work (part i.), it appears that he has adopted implicitly Dr Denman's method. Thus, he says (page 75),—"Sometimes the placenta seems merely to retain its original attachment ; it is readily separable by the hand, but it is not to be detached by uterine effort, nor can it be withdrawn by any moderate degree of force applied to the funis. At other times, it is so firmly adherent, as almost to feel as if it constituted a part of the uterine structure itself ; it is so strongly cemented to the uterine surface, that there is great difficulty in insinuating the fingers between the placenta and the uterus, and even in distinguishing what portion felt by the hand is uterus, and what placenta ; especially in a contracted uterus, where the hand has little room for action."

Again, in page 108, in detailing the particulars of a very interesting case, he says,—
" I had great trouble in separating the placenta with my fingers, it being attached nearly throughout its surface. I at length effected

its entire separation and removal." And, in page 117, in describing another interesting case, he says,—“ I found the placenta almost generally adherent to the uterus, and as I proceeded in its separation, one portion seemed to be confined in, and adherent to a corner of the fundus uteri. I had much difficulty in getting my hand into this contracted space, so as to insinuate my fingers between the placenta there attached and the uterus. I at length completed my object, and withdrew the placenta entire.”*

Mons. Baudelocque (paragraph 951), says,—
“ If this method does not succeed, we must endeavour to separate a part of the edge of the placenta, in order to insinuate the hand under it; or we may pierce it with the end of the finger near the base of the cord, and finish its

* Young practitioners cannot read too attentively the cases of retained placenta from various causes and under various complications, so faithfully and graphically described by Dr Ramsbotham, in his first part.

separation from the uterus by passing the finger all round behind it."

Capuron (page 337), after directing the method of introducing the hand into the uterus, for the purpose of extracting the placenta, says,—“ When some portion of the mass is felt to be detached, as is commonly the case, the fingers are to be gently insinuated at that part, and the placenta peeled off.”

Gardien (page 231, vol. iii.), recommends the same practice. He says,—“ If a portion of the placenta be already separated, the fingers are to be carried from behind that portion, for the purpose of continuing the separation, by insinuating the hand between the surface of the placenta and that of the uterus. If no part of the after-birth be separated, its substance must be pierced by the fingers.”

Against those methods of extracting the adhering placenta, the author has always urged the two following objections. Firstly, The

hazard of exciting inflammation on the surface of the uterus by the pressure of the fingers; and, secondly, The great risk of lacerating the substance of the uterus by tearing off a part of the placenta literally blended with it. The practice, which he has so long pursued and recommended, is well calculated to guard against both these dangers; for it neither tends to irritate the uterus nor to detach any part of the placenta which cannot be separated with safety.

An objection to the practice thus inculcated may occur to inexperienced practitioners, that the portion thus left behind in such cases may prove dangerous. It is, indeed, a curious circumstance, that, while Baudelocque (paragraph 952), starts this objection, alleging that "the adherent portion remaining in the uterus might cause the same accidents as if the whole were retained," he, in the very next paragraph, admits that "there are some cases where, far from persisting to extract the whole of the placenta, prudence

requires that we should leave a portion of it to nature."

It is not upon speculative principles that the author has adopted this practice, and yet mere reasoning upon the subject might have suggested its safety and utility. If all the separable parts of the mass be withdrawn, the uterus must contract round the retained portion, which will prevent hæmorrhagy; and when the indurated part separates by the process of sloughing, the probability is, that it may be thrown off by the natural efforts, failing of which, its expulsion may be promoted by artificial means.

Accordingly, the author's experience has confirmed this anticipation. He has attended many cases where two, three, or more days have intervened between the birth of the infant and the separation of the adherent indurated portion of the secundines, and he never witnessed any untoward symptom, such as flooding or subsequent irritative fever. In

one case, a mass weighing eight ounces was retained five days without occasioning any symptoms indicating danger.*

When it is thus necessary to leave a portion of the adhering mass, the progress of the case must be carefully watched, and particularly, the state of the lochial discharge must be examined at least twice a day, in order to ascertain when the sloughing of the retained portion is effected, for wherever that happens, a strong purgative enema must be administered.

On this subject Professor Davis has given a very sound advice to young practitioners. He says (page 1063),—"The proper, and indeed the only safe practice to be adopted in such cases, is to withdraw, by careful detachment, all of the placenta that is found NOT morbidly

* He shewed this mass, on the day after it was expelled, to his pupils in the public class room. It was the largest portion he had ever been compelled to leave adhering to the uterus.

adherent to the uterine parietes, leaving the diseased remainder to such kindly offices of nature as she may be competent to exert for their expulsion."

It is evident, however, that Professor Davis is not aware that the kindly offices of nature may be most beneficially assisted in such cases, as his subsequent remarks evince. "By the adoption of this prudent management," he says, "a very valuable proportion of cases have been known to terminate favourably by a very slow and gradual decomposition of the morbid remnants of the placenta, and final escape of them from the uterine cavity. This result, however, has not always taken place without much previous disturbance both of the uterine and general systems; but it is sufficiently gratifying and encouraging to know, that the patient is likely ultimately to recover, after having been exposed to the extreme danger in which her previous situation had been involved."

From mismanagement, the placenta may be

retained in the vagina, which although it be seldom productive of immediate danger, is always to be regarded as an untoward occurrence. It must be admitted that Dr Denman considered it salutary to allow the placenta, after being separated, "to abide in the vagina one hour after it is voided out of the cavity of the uterus."* But his reasons for this advice were so purely hypothetical, that it has never been adopted by the profession.

When, therefore, by tracing the cord to its root, as already directed, the placenta is found to be in the vagina, it is to be forthwith extracted, and this may be generally effected by forcing two fingers of the right hand through its substance at the root of the cord, and drawing it forward in the proper direction. The author has met with a few cases where the contraction of the vagina was so strong, that it became necessary to introduce the whole

* Introduction to Midwifery, page 330.

(right) hand, before he could accomplish the removal of the secundines. In those cases, one or more days had been allowed to elapse after the birth of the infant before the author's assistance was resorted to.

Sometimes the placenta, after being separated from the surface of the uterus, and having partially entered the vagina, is impeded in its progress by a sudden and strong contraction of the cervix and os uteri. The nature of this case is at once ascertained, by passing up two fingers of the right hand at the anterior part of the pelvis. A portion of the placenta is found evidently indurated by compression, while the root of the navel-string cannot be reached. It is not easy to explain what thus produces the contraction of the cervix and the os uteri, for it certainly happens, where the labour has been conducted with the utmost attention and skill.

There ought to be no delay in proceeding to overcome this resistance, because the natural

powers of the constitution seem to have no tendency to remove the spasm alluded to. This opinion is founded upon the fact, that the author has been called in to many cases where the placenta had been retained from this cause for many hours. In those cases it is necessary to introduce the right hand into the vagina, and to press up two fingers through the contracted parts to reach the root of the cord, when by penetrating the mass, as in the former case, a sufficient command can be obtained to complete the extraction.

APPENDIX.

APPENDIX.

REPORT OF EXPERIMENTS WITH THE STETHOSCOPE ON
THE ACTION OF THE FŒTAL HEART, &c.,

BY

DR JOHN MOIR,

ASSISTANT PHYSICIAN TO THE EDINBURGH GENERAL LYING-IN
HOSPITAL.

16th September 1833.—ANN M'PHAIL, second pregnancy, supposed to be eight months advanced. The stethoscope applied to the left side, evinced no *bruit de souffle*, but on the right side this was distinctly heard, and was synchronous with the mother's pulse, being 72 in the minute. A sound supposed to be that of the foetal heart beating 120 in the minute, was plainly perceived extending over a surface of about four inches square on the right side below the umbilicus. While listening to the sound, the infant moved pretty briskly, and the pulsations were increased 12 or 14 in the minute. This patient was again examined on the 22d September. The *bruit de souffle* was now heard on the left side, but it was more loud and distinct on the right, while at the same time, the sound of the foetal heart was perceived as at last examination, beating 130 in the minute. This woman was delivered of a living child on the 10th October.

AGNES DIXON, first pregnancy, 16th September 1833, supposed to be eight months and an half pregnant, *bruit de souffle* distinct on both sides, very loud on the right, and synchronous with the mother's pulse, which was 80. Pulsations of what was supposed the fœtal heart to the number of 130 in the minute, and increased in frequency from the movements of the infant, were perceived in the median line below the umbilicus, extending nearly over the same space as in M'Phail. Delivered of a living child on the 21st September.

BARBARA M'INTOSH, second pregnancy, supposed to be eight months and an half advanced, 19th September 1833. *Brut de souffle* distinct on each side, and synchronous with the mother's pulse, which was 88. Pulsations to the number of 132 in the minute, supposed to be those of the fœtal heart, were perceived below the umbilicus towards the right side. At times, these pulsations were rather confused, in consequence of the *souffle* being heard at the same place. Delivered of a living child on the 23d September.

JANET LOTHIAN, eight months advanced in her first pregnancy, 19th September 1833. *Brut de souffle* distinct on both sides, and synchronous with the mother's pulse, which was 72. Pulsations to the number of 132, supposed to be from the fœtal heart, were perceived below the umbilicus towards the left side. September 22d, *souffle* distinct on both sides, particularly on the

left, and synchronous with the mother's pulse, which was 94. Pulsations, supposed from the foetal heart, in the same situation as at the former examination, and numbering 126 in the minute. This woman was delivered of a living child upon the 10th October.

BRIDGET TENTON, eight months and an half in her third pregnancy, on the 29th September 1833. *Bruit de souffle* distinct on each side, and synchronous with the mother's pulse, which was 88. Pulsations from what was supposed the foetal heart perceived low down on the right side, numbering 132, and at one time nearly 150 in the minute. Delivered October 4th of a living child.

CHRISTIAN VEITCH, 19th September 1833, not quite eight months pregnant of her third child. *Bruit de souffle* distinct on the left side, but not so on the right, and synchronous with the mother's pulse which was 108. No pulsation from the foetal heart. This woman was again examined upon the 22d September. *Bruit de souffle* not heard on the left, but distinct on the right side, and still more distinctly in the median line between the umbilicus and the pubes, and synchronous with the mother's pulse, which was 88. Foetal heart, supposed to be distinctly heard in the left inguinal region, and to beat from 132 to 140 in the minute. On a third occasion, viz., 23d October, this woman was again examined. *Bruit de souffle* heard on both sides. In the right side it was heard

only over a limited space in a line with the umbilicus. The pulsations of what was supposed the foetal heart were perceived in the same situation as at the former report, and were 144 in the minute. Delivered 27th November of a living child.

MARY GOODALL, 25th September.—Pregnant of her second child. No sound could be distinguished over any part of the uterine region. Was delivered of a living child on the 2d November.

ANN BURN, 22d August.—*Bruit de souffle* on each side, but more distinct on the left, and synchronous with the mother's pulse; no other sound could be heard. The abdomen was much distended. Delivered on the 23d of a living child.

JANE THOMSON, 22d August.—*Bruit de souffle* distinct on both sides, and synchronous with the mother's pulse, which was 120. The body of the infant being distinctly felt through the parietes of the abdomen at the fundus of the uterus towards the right side, the stethoscope was applied over what was supposed to be the thorax, and the heart was perceived to beat 144 in the minute. This woman was delivered of twins on the 24th August.

ELIZA GLEN, 22d August.—*Bruit de souffle* only on the right side, and synchronous with the pulse, which was 60. Supposed foetal heart in a line with the um-

bilicus on the left side, beating 140 in the minute. This woman left the Hospital undelivered.

Dr Moir further states, that he had examined many other patients in the Edinburgh General Lying-In Hospital since the occurrence of the preceding cases, both before and during labour, and the results in all had been similar. The sounds have also, in most instances, been pretty readily recognised by most of the pupils in attendance, when tried during labour.

While still doubtful, from the result of the examination of the above mentioned cases, whether the sound which was considered to be that of the foetal heart, was really to be attributed to it or not, a case occurred on the 27th October 1833, which seemed satisfactorily to settle the question. Having occasion to perform the operation of turning, and having, previously to proceeding, administered a large opiate, Dr Moir took the opportunity of the interval before it should act, to run home for a stethoscope. Knowing from previous examination the position of the infant, that instrument was applied over the part of the mother's abdomen, where the foetal heart was supposed to be situated, and the same sound was heard as in the cases previously examined; the only difference being, that in this case it was considerably louder, owing probably to the absence of the liquor amnii. It beat 100 in the minute. The hand being now introduced into the uterus, had the effect of exciting a recurrence of the pains which had been sus-

pended by the opium, and on reaching the infant's thorax, the pulsations were only 70. The stethoscope being now again applied as before, while the fingers continued in contact with the infant's thorax, the pulsations, as heard through the one, and felt by the other, were found exactly to correspond, and to be then 80. On the recurrence, and during the continuance of the pain the pulsations invariably diminished in frequency, but gradually became accelerated as the pains went off, and continued so during the interval.

On the 6th May following, another case occurred, the investigation of which was attended with nearly similar results.

Dr Moir having been sent for by one of the pupils, in consequence of his patient being very weak and faint from loss of blood, which was ascertained to arise from the placenta being attached over the cervix and os uteri, the operation of turning was had recourse to, but before doing so, the stethoscope was applied, and the foetal heart heard towards the left side of the uterus, below the umbilicus, pulsating at from 120 to 130. Mr Drew, the gentleman in attendance, though the first time he had examined the pulsations of the foetus in utero, heard the sounds distinctly, and made the pulsations 120. On the introduction of the hand, the body of the infant was found lying towards the left side of the mother, with its right side towards her abdomen. The pulsations of the heart were 124, but

during the next pain fell to 90. The reduction in the frequency of the action of the foetal heart occurred during every pain, and continued for a short time subsequent to its going off, when it again rose to 120 or thereabouts, and continued so till the accession of the next pain. The reduction was not uniform. Once only it fell to 80. The sounds heard through the stethoscope, at the same moment as the pulsations were felt by the fingers, always corresponded exactly.

Three additional cases of turning, in consequence of presentation of the placenta, have fallen under Dr Moir's charge. In two of them the pulsations of the heart and cord were ascertained to correspond with the above, being about 120 or 130 during the remission of the pains, and reduced in frequency on their accession. The urgency of the third case prevented any accurate examination being made.

After recording the above facts, Dr Moir thus expresses himself,—On a careful consideration of the above cases, it appears,

Firstly, That one of the sounds heard through the abdominal parietes and uterus by means of the stethoscope is that of the foetal heart.

Secondly, That its natural pulsation, when the patient is not in labour, as ascertained in the Edinburgh General Lying-In Hospital, is about 120.

Thirdly, That those pulsations are subject to diminution in frequency on the application of compression by the action of the uterus, a circumstance of which Dr Evory Kennedy, in his work on Obstetric Auscultation, has taken no notice.

This effect of the contractions of the uterus, acting indirectly on the circulation of the fœtus through the medium of the brain, may account for the fact, that the pulsations of the heart are only about 60 in infants who do not breathe on birth, but in whom the circulation still goes on through the chord. While in the same degree as the balance of the circulation becomes re-established, in consequence of the removal of the pressure from the brain after birth, so do the pulsations increase in frequency, and the child become susceptible to external impressions, by means of which the process of breathing is established.

In corroboration of the above view, it may be remarked, that such cases more generally occur after severe or tedious labours,—and, moreover, that in them, when the balance is not quickly restored, it may not unfrequently be assisted by cutting the chord and allowing the escape of a little blood.

The other sound or placental souffle is always synchronous with the mother's pulse, and seems to be owing to the passage of the blood along the spermatic and hypogastric arteries, being generally heard equally

well on both sides in the situation where they are known to run.

As one of the diagnostic marks of pregnancy, the stethoscope may be considered a valuable, though not infallible addition to the other signs of that condition of the system, for cases occasionally occur, where, notwithstanding the most careful examination, doubts still remain as to whether it exist or not.

In two cases, where the patients were six months advanced in pregnancy, the foetal and placental sounds were very readily distinguished. In one of them the girl was deaf and dumb, and unwilling to submit to much examination. The signs from the presence of the arcola, and the account of the case, were pretty conclusive, but the presence of these signs removed all doubt.

Dr Spittal has, by the same means, been enabled to detect pregnancy in several cases. Once so early as between four and four and an half months. In one case the patient was examined at her own request, she being doubtful as to her own situation. Dr Spittal declared her to be pregnant without having recourse to any other means, and was correct.

But that the stethoscope cannot be relied on as an infallible means of distinguishing pregnancy, is proved by the fact, that in some cases of real pregnancy, the

application of the stethoscope has discovered no sound, as happened in the cases of Goodall and Burn, previously narrated. In Goodal there seemed to be nothing to account for its not being heard. In Burn the great distension of the abdomen might be the cause.

Another girl of the name of CUBIE was sent into the Lying-In Hospital, in order to have it ascertained whether she was pregnant. She was examined by the stethoscope for a considerable time, and in a variety of postures, but no sound could be heard. She was delivered about four months afterwards of twins, one of which was putrid.

In another case of suspected pregnancy, no sound could be heard with the aid of the stethoscope, but the girl subsequently acknowledged that she had quickened three days before.

The above communications from Dr Moir, were in the hands of the printer when he met with the following cases.

Mrs CECILIA ROBERTSON, about eight months pregnant of her fourth child, on the morning of the 1st January 1836, fell violently on the floor.

Between nine and ten o'clock, an immense gush of blood from the vagina suddenly took place while she was standing, and continued to flow in a stream for

some time, until she was put to bed. About mid-day, as Dr Moir was accidentally passing, he was requested to see her, and found her very weak and faint, with pallid features, with a pulse at 120, and scarcely perceptible.

On examination, it became necessary to remove from the vagina a quantity of coagulated blood which completely filled it, the hæmorrhagy was discovered to be still going on, and the vagina was again soon filled with another clot. The os tinæ admitted with difficulty the point of the fore finger. No placenta being perceptible, it was inferred that the hæmorrhage arose from its accidental separation in consequence of the fall, but the symptoms were so urgent as to require immediate delivery.

From the unyielding state of the os uteri, it seemed impossible to pass the hand into the uterus, and therefore an attempt was made to push back the presenting part, viz., the head, with two fingers, and to hook down one of the feet of the infant, a practice recommended in such cases by Dr Hamilton. This was with some difficulty accomplished, and a living infant was born at the end of an hour. Considerable hæmorrhagy followed, but it was speedily checked, and the poor woman soon rallied.

Very early in the course of the operation, a loop of the cord was felt through the membranes, and the pul-

sations several times counted. They ranged invariably at from 130 to 140, except once only, when, during a period of ten seconds, they suddenly fell to the rate of 90 in the minute, there being at the time little or no uterine action.

P. S.—*January 8.* Both mother and child continue to do well.

Mrs BRUCE, a patient in the Edinburgh Lying-In Hospital, who supposed herself at the full period of pregnancy, was, at 10 o'clock A. M. of Sunday January 10, alarmed by a discharge of blood, which soon stopped, but recurred in the afternoon of the same day. She then mentioned that she had had for five days occasional threatenings. On examination, at 4 P. M., it was found that the vagina contained a quantity of coagulated blood, that the os tinæ was relaxed, and easily permitted the finger to pass through it, and that the placenta was presenting, but the discharge was trifling and the pulse natural. At this time both Dr Spittal and Dr Moir felt the pulsations of the foetal heart to be from 132 to 136 in a minute.

At eight P. M., the symptoms having become urgent, the operation of turning was commenced, previous to which, it was ascertained that the pulsations of the foetal heart remained as before. On passing the hand by the side of the placenta, into the cavity of the ovum, strong uterine contractions were excited.

In the mean while, the navel-string was reached, and while Dr Spittal applied the stethoscope to the abdomen of the patient, Dr Moir counted the pulsations of the cord. They both ascertained that the pulsations amounted exactly to 60 in a minute ; but suddenly they increased to about 120, of which both gentlemen became sensible at the same moment. They soon, however, fell again to 68. The delivery was quickly finished, and both mother and child were saved.

The placenta was of an unusual size, rather thin, and a part, to the extent of about the size of a crown-piece, was altered in texture, being indurated, and semi-transparent. It was this part which had been over the os uteri.

Dr Moir adds to the above communication, that he saw, also on the 10th of January, a private patient who had uterine hæmorrhage ; and on applying the stethoscope, he found the pulsations of the foetal heart to be 140. But his father, Mr Moir, Surgeon to the Edinburgh General Lying-In Hospital, in the course of delivering this patient (some hours afterwards), by the operation of turning, found the pulsations not to exceed 82.

1870

1. The first of the year was a very cold one, with much snow and ice. The weather was very disagreeable, and the people were much distressed. The crops were all killed, and the people were forced to live on their stocks. The government was very kind to the people, and gave them much assistance. The people were very grateful to the government, and they all lived happily ever after.

2. The second of the year was a very warm one, with much rain and wind. The weather was very disagreeable, and the people were much distressed. The crops were all killed, and the people were forced to live on their stocks. The government was very kind to the people, and gave them much assistance. The people were very grateful to the government, and they all lived happily ever after.

3. The third of the year was a very cold one, with much snow and ice. The weather was very disagreeable, and the people were much distressed. The crops were all killed, and the people were forced to live on their stocks. The government was very kind to the people, and gave them much assistance. The people were very grateful to the government, and they all lived happily ever after.

4. The fourth of the year was a very warm one, with much rain and wind. The weather was very disagreeable, and the people were much distressed. The crops were all killed, and the people were forced to live on their stocks. The government was very kind to the people, and gave them much assistance. The people were very grateful to the government, and they all lived happily ever after.

5. The fifth of the year was a very cold one, with much snow and ice. The weather was very disagreeable, and the people were much distressed. The crops were all killed, and the people were forced to live on their stocks. The government was very kind to the people, and gave them much assistance. The people were very grateful to the government, and they all lived happily ever after.

6. The sixth of the year was a very warm one, with much rain and wind. The weather was very disagreeable, and the people were much distressed. The crops were all killed, and the people were forced to live on their stocks. The government was very kind to the people, and gave them much assistance. The people were very grateful to the government, and they all lived happily ever after.

7. The seventh of the year was a very cold one, with much snow and ice. The weather was very disagreeable, and the people were much distressed. The crops were all killed, and the people were forced to live on their stocks. The government was very kind to the people, and gave them much assistance. The people were very grateful to the government, and they all lived happily ever after.

8. The eighth of the year was a very warm one, with much rain and wind. The weather was very disagreeable, and the people were much distressed. The crops were all killed, and the people were forced to live on their stocks. The government was very kind to the people, and gave them much assistance. The people were very grateful to the government, and they all lived happily ever after.

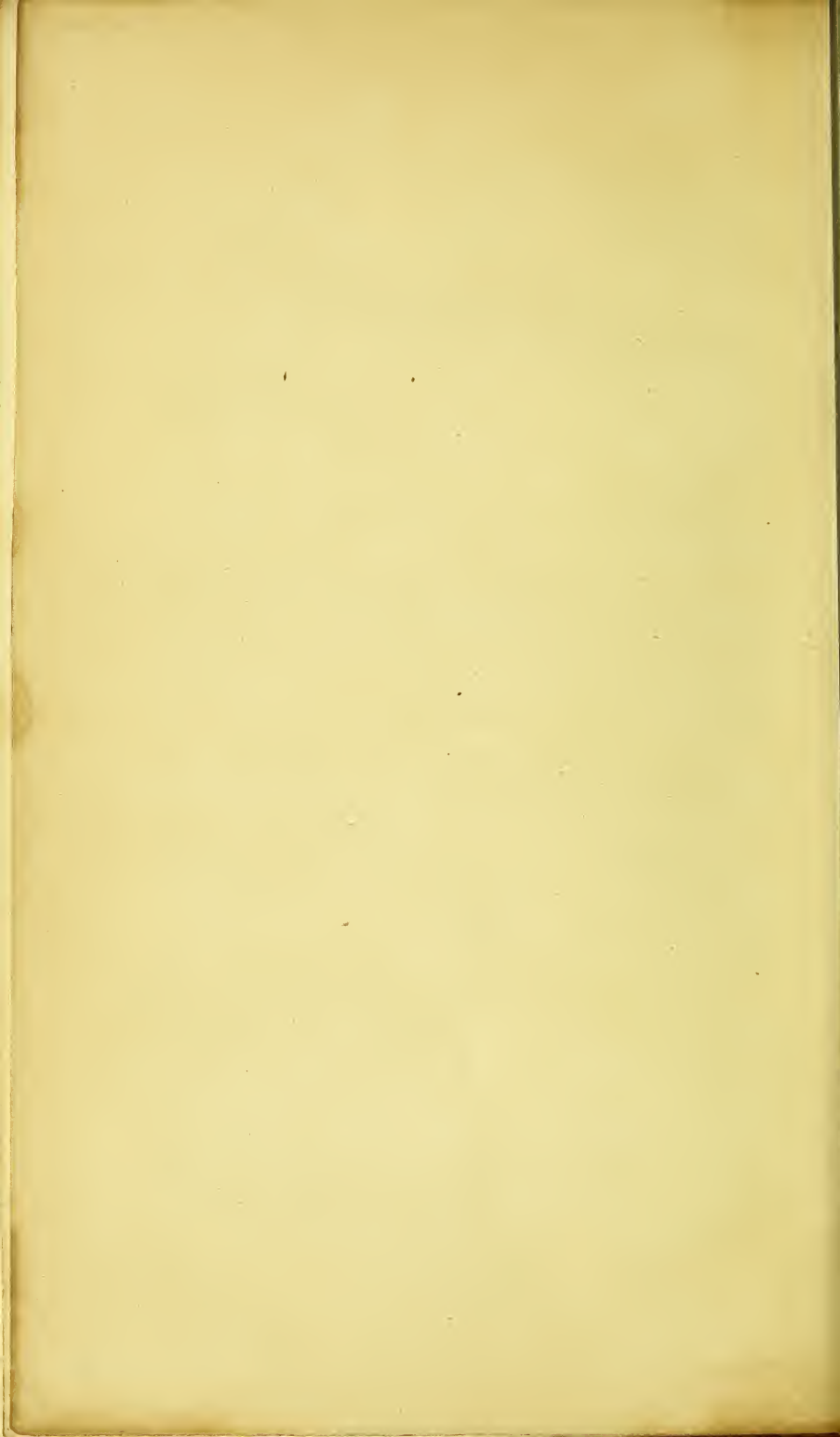
9. The ninth of the year was a very cold one, with much snow and ice. The weather was very disagreeable, and the people were much distressed. The crops were all killed, and the people were forced to live on their stocks. The government was very kind to the people, and gave them much assistance. The people were very grateful to the government, and they all lived happily ever after.

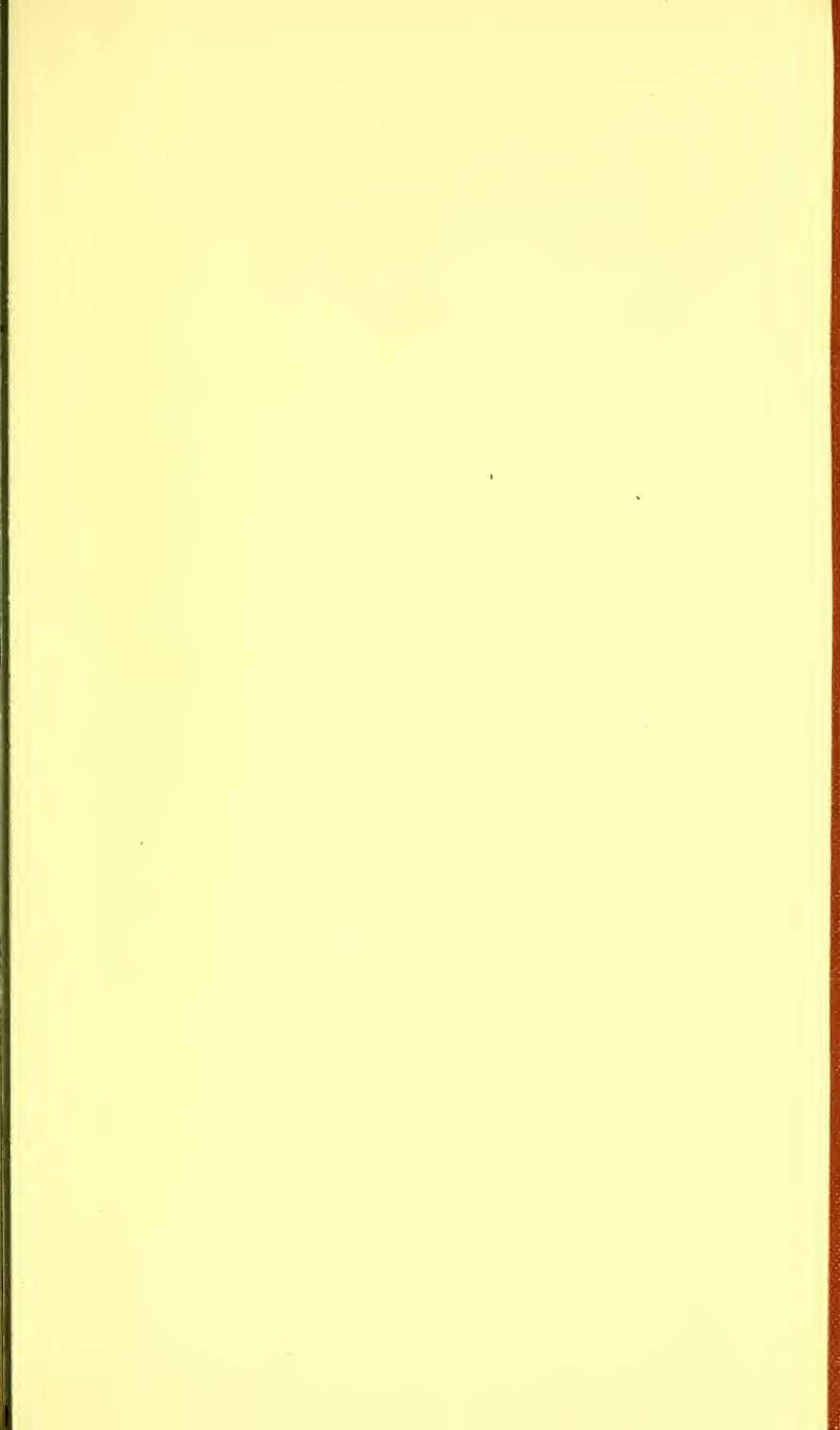
10. The tenth of the year was a very warm one, with much rain and wind. The weather was very disagreeable, and the people were much distressed. The crops were all killed, and the people were forced to live on their stocks. The government was very kind to the people, and gave them much assistance. The people were very grateful to the government, and they all lived happily ever after.

ERRATA.

<i>Page</i>	<i>Line</i>	
18	5	<i>For into read into the.</i>
24	5	<i>for ceral read ceræ.</i>
39	4	<i>read it was.</i>
67	19-20	<i>for in consequence of read from.</i>
93	12	<i>for œdima read œdema.</i>
101	18	<i>read had been.</i>
114	5-6	<i>for parities read parietes.</i>
117	2	<i>for incysted read encysted.</i>
146	2	<i>for surface read edge.</i>
158	7	<i>read and old.</i>
184	14	<i>for 16th read 6th December.</i>
202	1	<i>for Chirurgical read Chemical.</i>
209	2	<i>for edition read editions.</i>
278	4	<i>for held read hold.</i>
284	10	<i>for case read cause.</i>













R.B. 9.11.1979

